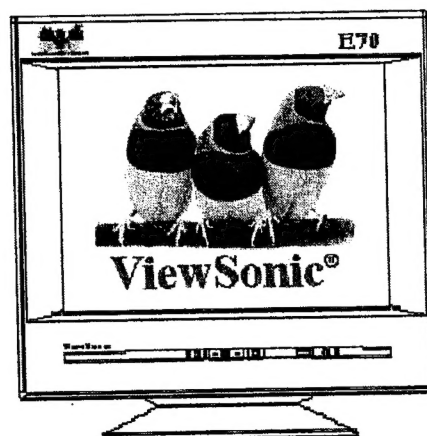


# Service Manual

**ViewSonic E70**  
**Model No. VCDTS21496-1**

***17" Digital Controlled Color Monitor***  
***E<sup>2</sup> Series***



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# **Revision History**

<b>Revision</b>	<b>Date</b>	<b>Description Of Changes</b>	<b>Approval</b>
1.0	8/5/99	Initial Issue	T. Sears

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## **1. PRECAUTION AND NOTICES**

### **1.1. SAFETY PRECAUTIONS**

1. Observe all caution and safety related notes located inside the display cabinet.
2. Operation of the display with the cover removed, may cause a serious, shock hazard from the display power supply. Work on the display should not be attempted by anyone who is not thoroughly familiar with the necessary precautions when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. people who are not so equipped should be kept away while handling picture tube. Keep picture tube away from the body while handling.
4. The picture tube is constructed to limit X-RAY radiation to 0.5 mR/HR. For continued protection, use the designated replacement tube only, and adjust the voltages so that the designated maximum rating at the anode will not be exceeded.
5. Before returning a serviced display to the customer, a thorough safety test must be performed to verify that the display is safe to operate without danger or shock. Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as screw heads. Test method for current leakage is described as follow.
  - (a) Plug the AC line cord directly into rated AC outlet (do not use a line isolation transformer during this check).
  - (b) Use an AC voltmeter having 5000 ohms per volt or with more sensitivity in the following manner: Connect a 1500 ohms 10 Watt resistor, paralleled by a 0.15mfd, AC type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts simultaneously. Measure the AC voltage across the combination of 1500 ohms resistor and 0.15mfd capacitor.
  - (c) Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.
  - (d) Voltage measured must not exceed 2.8 volts RMS. This corresponds to 2 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

### **1.2. PRODUCT SAFETY NOTICE**

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY radiation or other hazards.



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## **1.3. SERVICE NOTES**

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

## **1.4. HIGH VOLTAGE WARNING**

Operation of monitor outside of cabinet or with back removed may cause a serious shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnection ground lead connections between chassis and picture tube dag when operating chassis.

Certain HV failures can increase X-ray radiation. Monitor should not be operated with HV levels exceeding the specified rating for the chassis type.

The maximum operating HV specified for the chassis used in this monitor is

26KV  $\pm$  1KV

with a line voltage of 120/240V AC. Higher voltage may also increase possibility of failure in HV Supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage or operating supply voltages. No changes should be made to the original design of the monitor. Components shown in the shaded areas on the schematic should be replaced with exact factory replacement parts. The use of unauthorized substitute parts may create a shock, fire or other hazard.

To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and CRT dag grounding device.

When servicing the High Voltage System, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire (such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord disconnected from AC power outlet).

The picture tube used in this monitor employs integral implosion protection. Replace with tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only after discharging the high voltage completely.

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## **2. SERVICE TOOL & EQUIPMENT REQUIRED**

1. MULTIMETER
2. OSCILLOSCOPE
3. SCREW DRIVER
4. IRON
5. ABSORBER
6. SOLDER

## **3. SPECIFICATIONS**

### **3.1. PRODUCT SPECIFICATIONS**

<b>CRT:</b>	Size:	17 Inch Diagonal Flat Square Type
	Viewable Size:	15.6 Inch (Diagonal)
	Dot Pitch:	0.27/0.25 (Optional)
	Deflection:	90° Degree
<b>DISPLAY:</b>	Size:	300mm x 225mm
	Diagonal Size:	398mm
	Color:	Unlimited Colors
	Resolution:	Up to 1280 x 1024
	Pixel Rate:	110MHz
<b>INPUT SIGNAL:</b>	Video Signal:	RGB Analogue 0.7Vpp 75 Ohms
	Sync. Signal:	H/V. Separated, TTL. Level Positive or Negative.
	Scanning Freq.:	30 KHz to 70 KHz for Horizontal
		50 Hz to 120 Hz for Vertical
<b>POWER SOURCE:</b>	Power Supply:	AC 100-240V, 60Hz/50Hz.
	Power Consumption:	100W Max.

### **POWER MANAGEMENT**

The Power Management states are controlled by the presence and/or absence of horizontal and vertical sync signals according to the following:

STATE	H. Sync	V. Sync	Power (normal)	LED
ON	ON	ON	100WATTS	GREEN
STANDBY	OFF	ON	15WATTS	ORANGE
SUSPEND	ON	OFF	15WATTS	ORANGE
OFF	OFF	OFF	3WATTS	ORANGE

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## 3.2. FACTORY PRESET MODE TIMING CHART

MODE NO	1	2	3	4	5	UNIT
	VESA	VGA	VESA	VESA	VESA	
Resolution	1024x768	640x400	640x480	640x480	800x600	
Pixel	78.750	25.175	31.500	36.000	49.500	MHz
H. Sync Polarity	+	-	-	-	+	
V. Sync. Polarity	+	+	-	-	+	
Horizontal Frequency	60.023	31.469	37.500	43.269	46.875	KHz
Horizontal Period	16.660	31.778	26.667	23.111	21.333	usec
Horizontal Sync Width	1.219	3.813	2.032	1.556	1.616	usec
Horizontal Back Porch	2.235	1.907	3.810	2.222	3.232	usec
Horizontal Active Video	13.003	25.422	20.317	17.778	16.162	usec
Horizontal Front Porch	0.203	0.636	0.508	1.556	0.323	usec
Vertical Frequency	75.029	70.087	75.000	85.008	75.000	Hz
Vertical Period	13.328	14.268	13.333	11.764	13.333	msec
Vertical Sync Width	0.050	0.064	0.080	0.069	0.064	msec
Vertical Back Porch	0.466	1.112	0.427	0.578	0.448	msec
Vertical Active Video	12.795	12.711	12.800	11.093	12.800	msec
Vertical Front Porch	0.017	0.381	0.027	0.023	0.021	msec
Interlaced	NO	NO	NO	NO	NO	

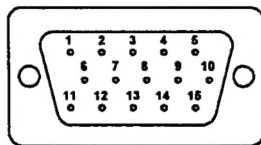
MODE NO	6	7	8	9	10	UNIT
	VESA	VESA	VESA	VESA	MAC	
Resolution	800x600	1024x768	1024x768	1280x1024	640x480	
Pixel	56.250	65.000	94.500	108.0	30.240	MHz
H. Sync Polarity	+	-	+	+	-	
V. Sync. Polarity	+	-	+	+	-	
Horizontal Frequency	53.674	48.363	68.677	63.981	35.00	KHz
Horizontal Period	18.631	20.677	14.561	15.630	28.571	usec
Horizontal Sync Width	1.138	2.092	1.016	1.037	2.116	usec
Horizontal Back Porch	2.702	2.462	2.201	2.296	3.174	usec
Horizontal Active Video	14.222	15.754	10.836	11.852	21.164	usec
Horizontal Front Porch	0.569	0.369	0.508	0.444	2.116	usec
Vertical Frequency	85.061	60.004	84.996	60.020	66.667	Hz
Vertical Period	11.756	16.666	11.765	16.661	14.999	msec
Vertical Sync Width	0.056	0.124	0.044	0.047	0.085	msec
Vertical Back Porch	0.503	0.599	0.524	0.594	1.114	msec
Vertical Active Video	11.179	15.880	11.183	16.005	13.714	msec
Vertical Front Porch	0.019	0.062	0.015	0.016	0.085	msec
Interlaced	NO	NO	NO	NO	NO	

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MODE NO	11	12				UNIT
	MAC	MAC				
Resolution	832x624	1024x768				
Pixel	57.283	80.000				MHz
H. Sync Polarity	—	—				
V. Sync. Polarity	—	—				
Horizontal Frequency	49.725	60.241				KHz
Horizontal Period	20.111	16.6				usec
Horizontal Sync Width	1.117	1.2				usec
Horizontal Back Porch	3.910	2.2				usec
Horizontal Active Video	14.525	12.8				usec
Horizontal Front Porch	0.559	0.4				usec
Vertical Frequency	74.534	74.927				Hz
Vertical Period	13.414	13.346				msec
Vertical Sync Width	0.060	0.05				msec
Vertical Back Porch	0.784	0.498				msec
Vertical Active Video	12.549	12.749				msec
Vertical Front Porch	0.02	0.05				msec
Interlaced	NO	NO				

### 3.3. D-SUB CONNECTOR

#### D-SUB 15 PIN CONNECTOR



1.R	6.GND	11.GND
2.G	7.GND	12.SDA
3.B	8.GND	13.H.SYNC
4.GND	9. NC	14.V.SYNC
5.NC	10.GND	15.SCL

#### SIGNAL LEVEL

CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL negative
SCL	DDC1/2B	TTL negative

**EXPLODED VIEW (E70)**

This diagram illustrates the exploded view of the E70 chassis, showing the relationship between the CRT PCB Assy and the Main PCB Assy. The CRT PCB Assy (top right) includes components like IC904, M405, M802, and various connectors (A, B, C, D, E, F, G). The Main PCB Assy (bottom right) includes components like IC301, IC409, Q429, Q407, Q410, Q411, Q805, M801, M902, M903, and various connectors (A, B, C, D, E, F, G). The chassis (center) includes components like V901, P901, L811, L501, and various connectors (A, B, C, D, E, F, G). The diagram also shows the front panel (145) and the rear panel (146) with their respective connectors (142, 143, 144, 148 X2, 149 X2, 150 X2, 151 X2, 152 X2, 153 X2, 154 X2, 155 X2, 156 X2, 157 X2, 158 X2, 159 X2, 160 X2, 161 X2, 162 X2, 163 X2, 164 X2, 165 X2, 166 X2, 167 X2, 168 X2, 169 X2, 170 X2, 171 X2, 172 X2, 173 X2, 174 X2, 175 X2, 176 X2, 177 X2, 178 X2, 179 X2, 180 X2, 181 X2, 182 X2, 183 X2, 184 X2, 185 X2, 186 X2, 187 X2, 188 X2, 189 X2, 190 X2, 191 X2, 192 X2, 193 X2, 194 X2, 195 X2, 196 X2, 197 X2, 198 X2, 199 X2, 200 X2, 201 X2, 202 X2, 203 X2, 204 X2, 205 X2, 206 X2, 207 X2, 208 X2, 209 X2, 210 X2, 211 X2, 212 X2, 213 X2, 214 X2, 215 X2, 216 X2, 217 X2, 218 X2, 219 X2, 220 X2, 221 X2, 222 X2, 223 X2, 224 X2, 225 X2, 226 X2, 227 X2, 228 X2, 229 X2, 230 X2, 231 X2, 232 X2, 233 X2, 234 X2, 235 X2, 236 X2, 237 X2, 238 X2, 239 X2, 240 X2, 241 X2, 242 X2, 243 X2, 244 X2, 245 X2, 246 X2, 247 X2, 248 X2, 249 X2, 250 X2, 251 X2, 252 X2, 253 X2, 254 X2, 255 X2, 256 X2, 257 X2, 258 X2, 259 X2, 260 X2, 261 X2, 262 X2, 263 X2, 264 X2, 265 X2, 266 X2, 267 X2, 268 X2, 269 X2, 270 X2, 271 X2, 272 X2, 273 X2, 274 X2, 275 X2, 276 X2, 277 X2, 278 X2, 279 X2, 280 X2, 281 X2, 282 X2, 283 X2, 284 X2, 285 X2, 286 X2, 287 X2, 288 X2, 289 X2, 290 X2, 291 X2, 292 X2, 293 X2, 294 X2, 295 X2, 296 X2, 297 X2, 298 X2, 299 X2, 300 X2, 301 X2, 302 X2, 303 X2, 304 X2, 305 X2, 306 X2, 307 X2, 308 X2, 309 X2, 310 X2, 311 X2, 312 X2, 313 X2, 314 X2, 315 X2, 316 X2, 317 X2, 318 X2, 319 X2, 320 X2, 321 X2, 322 X2, 323 X2, 324 X2, 325 X2, 326 X2, 327 X2, 328 X2, 329 X2, 330 X2, 331 X2, 332 X2, 333 X2, 334 X2, 335 X2, 336 X2, 337 X2, 338 X2, 339 X2, 340 X2, 341 X2, 342 X2, 343 X2, 344 X2, 345 X2, 346 X2, 347 X2, 348 X2, 349 X2, 350 X2, 351 X2, 352 X2, 353 X2, 354 X2, 355 X2, 356 X2, 357 X2, 358 X2, 359 X2, 360 X2, 361 X2, 362 X2, 363 X2, 364 X2, 365 X2, 366 X2, 367 X2, 368 X2, 369 X2, 370 X2, 371 X2, 372 X2, 373 X2, 374 X2, 375 X2, 376 X2, 377 X2, 378 X2, 379 X2, 380 X2, 381 X2, 382 X2, 383 X2, 384 X2, 385 X2, 386 X2, 387 X2, 388 X2, 389 X2, 390 X2, 391 X2, 392 X2, 393 X2, 394 X2, 395 X2, 396 X2, 397 X2, 398 X2, 399 X2, 400 X2, 401 X2, 402 X2, 403 X2, 404 X2, 405 X2, 406 X2, 407 X2, 408 X2, 409 X2, 410 X2, 411 X2, 412 X2, 413 X2, 414 X2, 415 X2, 416 X2, 417 X2, 418 X2, 419 X2, 420 X2, 421 X2, 422 X2, 423 X2, 424 X2, 425 X2, 426 X2, 427 X2, 428 X2, 429 X2, 430 X2, 431 X2, 432 X2, 433 X2, 434 X2, 435 X2, 436 X2, 437 X2, 438 X2, 439 X2, 440 X2, 441 X2, 442 X2, 443 X2, 444 X2, 445 X2, 446 X2, 447 X2, 448 X2, 449 X2, 450 X2, 451 X2, 452 X2, 453 X2, 454 X2, 455 X2, 456 X2, 457 X2, 458 X2, 459 X2, 460 X2, 461 X2, 462 X2, 463 X2, 464 X2, 465 X2, 466 X2, 467 X2, 468 X2, 469 X2, 470 X2, 471 X2, 472 X2, 473 X2, 474 X2, 475 X2, 476 X2, 477 X2, 478 X2, 479 X2, 480 X2, 481 X2, 482 X2, 483 X2, 484 X2, 485 X2, 486 X2, 487 X2, 488 X2, 489 X2, 490 X2, 491 X2, 492 X2, 493 X2, 494 X2, 495 X2, 496 X2, 497 X2, 498 X2, 499 X2, 500 X2, 501 X2, 502 X2, 503 X2, 504 X2, 505 X2, 506 X2, 507 X2, 508 X2, 509 X2, 510 X2, 511 X2, 512 X2, 513 X2, 514 X2, 515 X2, 516 X2, 517 X2, 518 X2, 519 X2, 520 X2, 521 X2, 522 X2, 523 X2, 524 X2, 525 X2, 526 X2, 527 X2, 528 X2, 529 X2, 530 X2, 531 X2, 532 X2, 533 X2, 534 X2, 535 X2, 536 X2, 537 X2, 538 X2, 539 X2, 540 X2, 541 X2, 542 X2, 543 X2, 544 X2, 545 X2, 546 X2, 547 X2, 548 X2, 549 X2, 550 X2, 551 X2, 552 X2, 553 X2, 554 X2, 555 X2, 556 X2, 557 X2, 558 X2, 559 X2, 560 X2, 561 X2, 562 X2, 563 X2, 564 X2, 565 X2, 566 X2, 567 X2, 568 X2, 569 X2, 570 X2, 571 X2, 572 X2, 573 X2, 574 X2, 575 X2, 576 X2, 577 X2, 578 X2, 579 X2, 580 X2, 581 X2, 582 X2, 583 X2, 584 X2, 585 X2, 586 X2, 587 X2, 588 X2, 589 X2, 590 X2, 591 X2, 592 X2, 593 X2, 594 X2, 595 X2, 596 X2, 597 X2, 598 X2, 599 X2, 600 X2, 601 X2, 602 X2, 603 X2, 604 X2, 605 X2, 606 X2, 607 X2, 608 X2, 609 X2, 610 X2, 611 X2, 612 X2, 613 X2, 614 X2, 615 X2, 616 X2, 617 X2, 618 X2, 619 X2, 620 X2, 621 X2, 622 X2, 623 X2, 624 X2, 625 X2, 626 X2, 627 X2, 628 X2, 629 X2, 630 X2, 631 X2, 632 X2, 633 X2, 634 X2, 635 X2, 636 X2, 637 X2, 638 X2, 639 X2, 640 X2, 641 X2, 642 X2, 643 X2, 644 X2, 645 X2, 646 X2, 647 X2, 648 X2, 649 X2, 650 X2, 651 X2, 652 X2, 653 X2, 654 X2, 655 X2, 656 X2, 657 X2, 658 X2, 659 X2, 660 X2, 661 X2, 662 X2, 663 X2, 664 X2, 665 X2, 666 X2, 667 X2, 668 X2, 669 X2, 670 X2, 671 X2, 672 X2, 673 X2, 674 X2, 675 X2, 676 X2, 677 X2, 678 X2, 679 X2, 680 X2, 681 X2, 682 X2, 683 X2, 684 X2, 685 X2, 686 X2, 687 X2, 688 X2, 689 X2, 690 X2, 691 X2, 692 X2,





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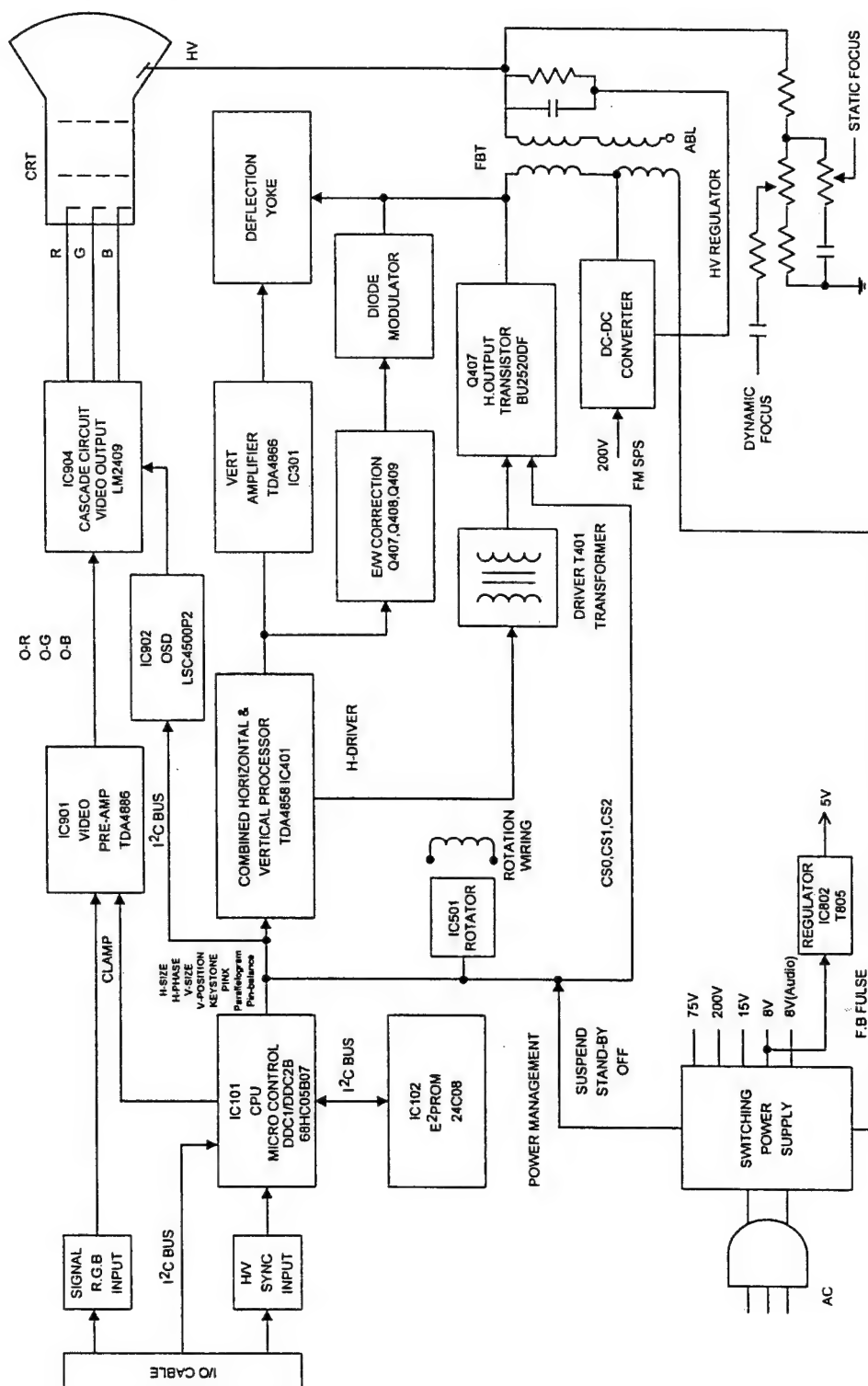
## 4-2. EXPLODED VIEW PARTS LIST

Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
131		2603200056	STAND	JD177S ABS94HB VSC COLOR	1	
131		2603200055	STAND	JD177S ABS94HB GY7521	1	
137		2024256603	PANEL	177S E70 ABS94V0 V.S.C COLOR	1	
137		2024256602	PANEL	JD177S V.S E70 ABS94V0 GY7521	1	
138		2080205400	SCREW,SPE T+	JD157N 5X30L WASHER D=18	4	
139		2061450300	BUSHING	□20X□6.0X□3.0t	4	
140		2080000500	SCREW,SPE	IC SCREW M3X12	2	
141		2044255003	FUNCTION KEY	177S E70 ABS94V0 V.S.C COLOR	1	
141		2044255002	FUNCTION KEY	JD177S ABS94V0 GY7521	1	
142		2046254503	PUSH BUTTON	177S E70 ABS94V0 V.S.C COLOR	1	
142		2046254502	PUSH BUTTON	JD177S ABS94V0 GY7521	1	
143		2105150200	SPRING	□0.5	1	
144		2053255700	INDICATOR	JD177D POWER LED PMMA94HB	1	
145		2051350200	NAME PLATE	JD144V3 VIEWSONIC 3BIRDS AL	1	
146		2074156801	HOLDER	JD177S (PCB) ABS94V0 G7258	2	
148		2084740102	SCREW,BND T+	M4X10(BND T+)	4	
149		2074153400	HOLDER	NYLON 66(UL)	1	
150		2074157300	HOLDER	JD177S SPACER HOLDER NYLON	2	
156		2074157200	HOLDER	JD177S P2-PCB SW NYLON 66	1	
161		2022254603	CABI BACK	177S E70 ABS94V0 V.S.C COLOR	1	
161		2022254602	CABI BACK	JD177S ABS94V0 GY7521	1	
163		2084740202	SCREW,BND T+	M4X20(BND T+)	4	
165		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
180		2090105043	WASHER,METAL	20X5.5D 0.5T	4	
181		2071650700	SHIELD PLATE	SPTE T=0.3	1	
182		2072252500	HEAT SINK	A1100P t=2m/m	1	
183		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
184		2074152600	HOLDER	PC 94V0	1	
185		2061250300	SPONGE	JD145K 50X80X35t Pu FOAM94HF-1	1	
191		2072252001	HEAT SINK	A1100P+SPTE	1	
192		2084730102	SCREW,BND T+	M3X10(BND T+)	4	
193		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	1	
195		2071952200	METAL FITTG	JD177G SECC 1mm	1	
196		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	1	
197		2087230102	SCREW,B SPW+	3X10(T+) SWRM-3 ZMC2-C	2	
198		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	2	
201		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
202		2072251300	HEAT SINK	A60635-TS	1	
203		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
205		2072253900	HEAT SINK	JD177J 2072253600/COAT NICKEL	1	
206		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
210		2072214600	HEAT SINK	JD176B ALUMINUM	1	
211		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
212		2071952900	METAL FITTG	JD199A SECC t=1.0mm	1	
213		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
219		2074150900	HOLDER	NYLON 66	1	

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## 5. BLOCK DIAGRAM

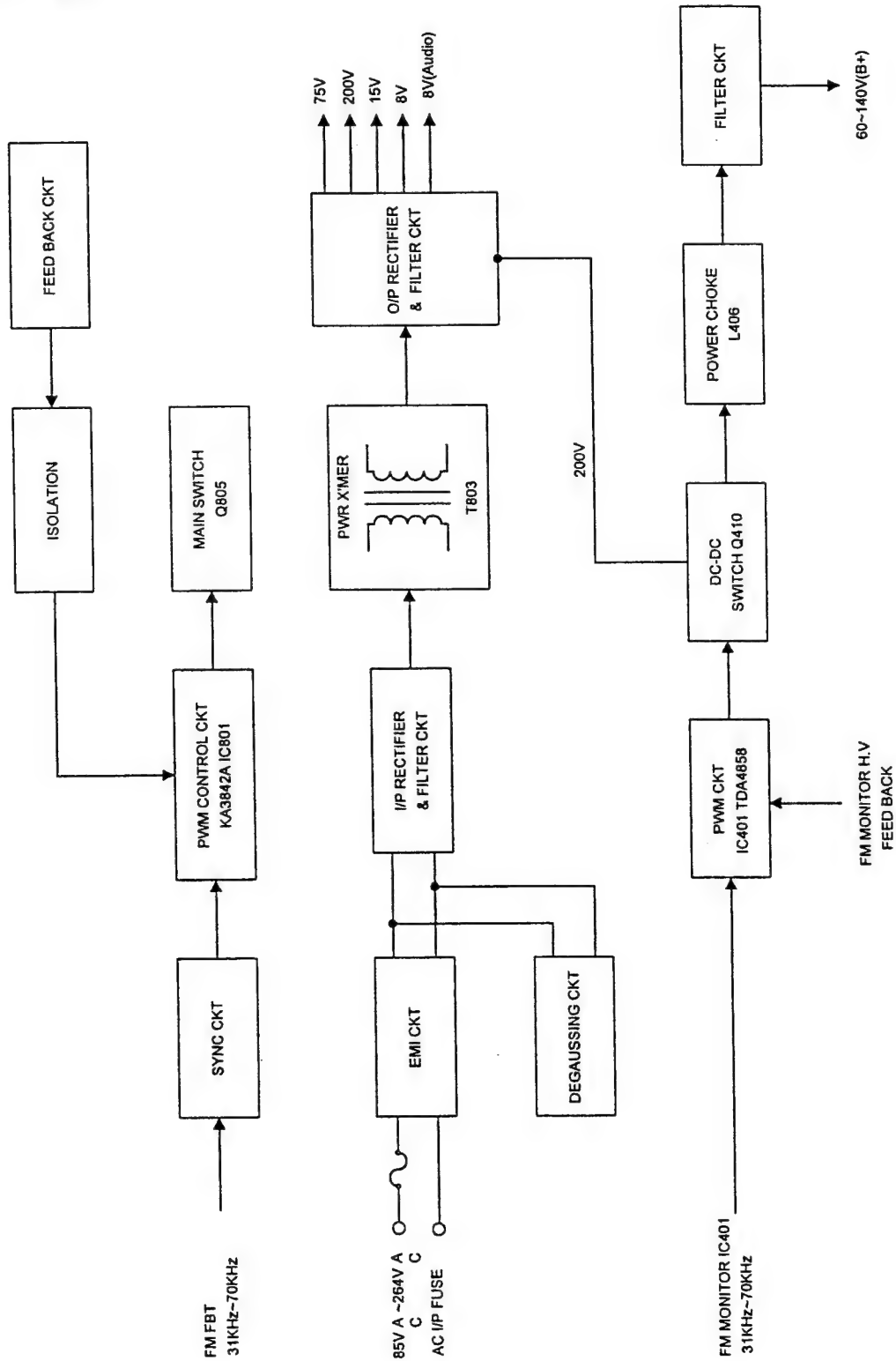
### 5.1. (VIDEO, VERT & HORT)





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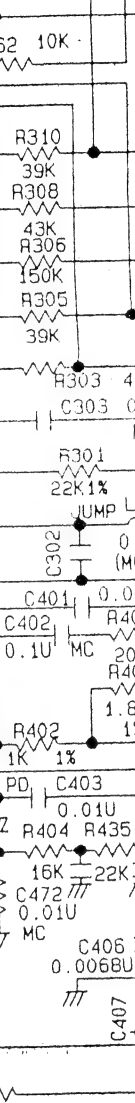
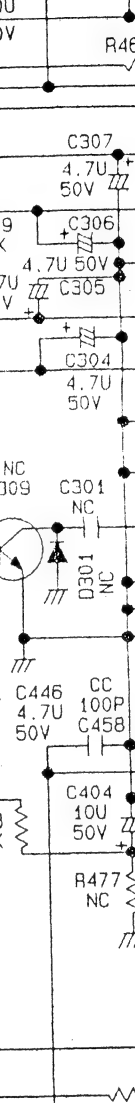
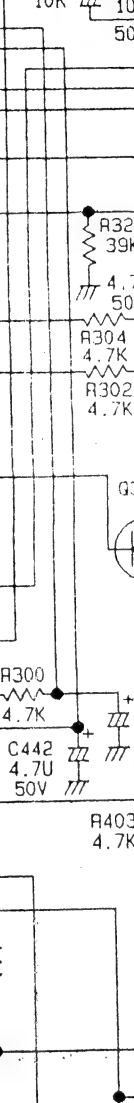
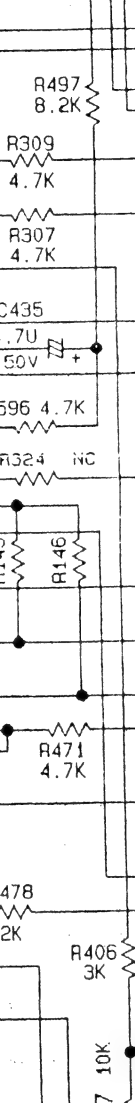
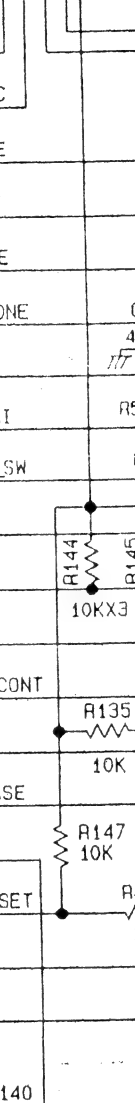
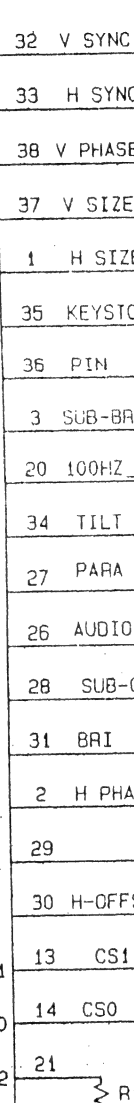
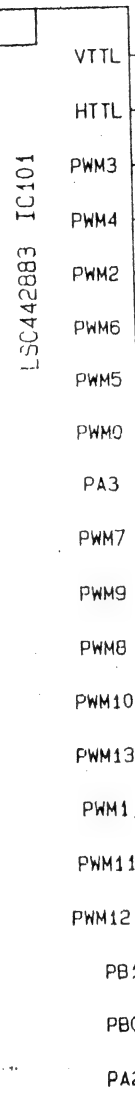
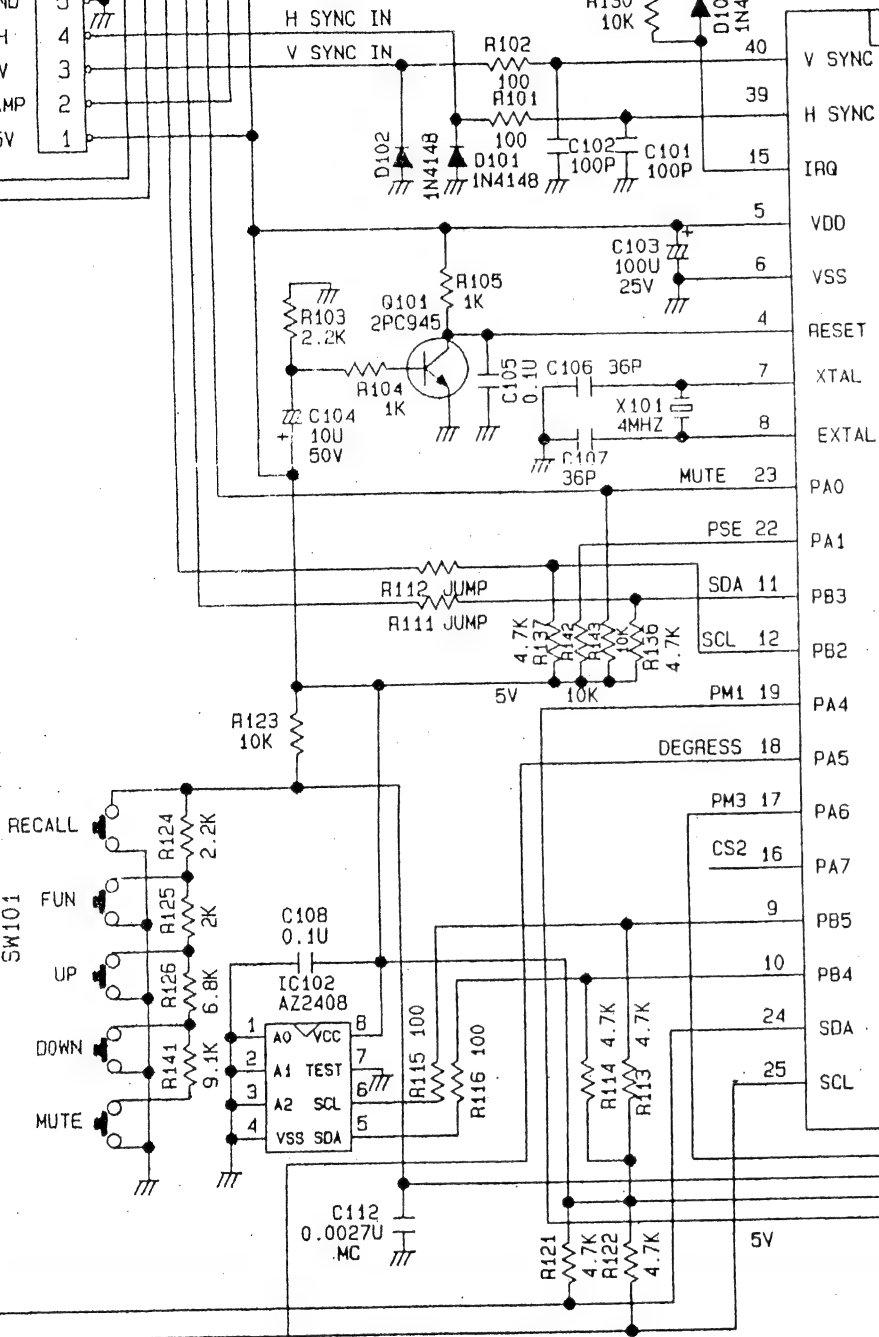
## 5.2. SPS

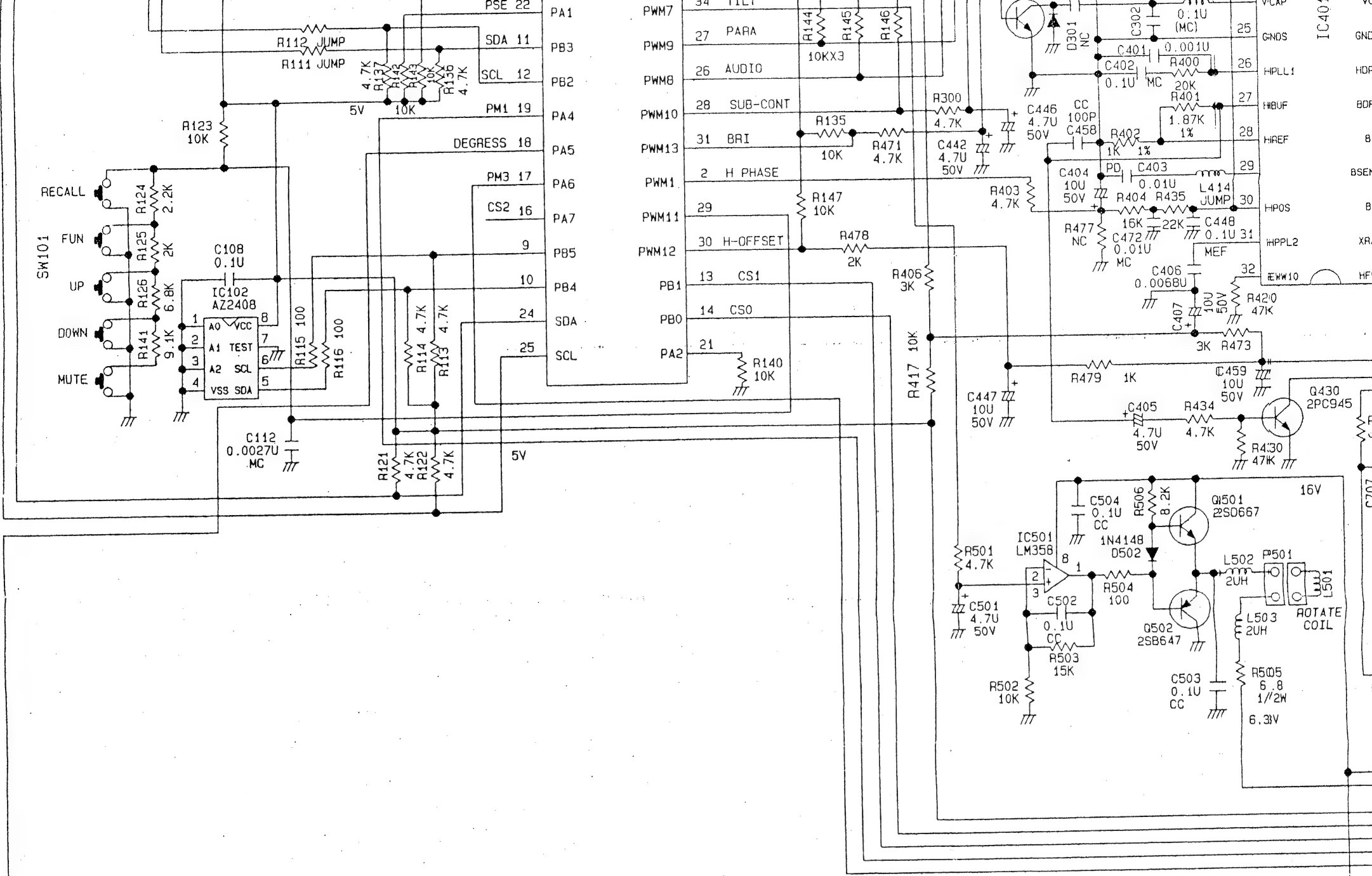


	CS0	CS1	CS2
50K-54K	L	H	H
53K-42K	L	L	H
42K-36K	H	H	H
36K-29K	H	L	H
29K-23K	H	L	L

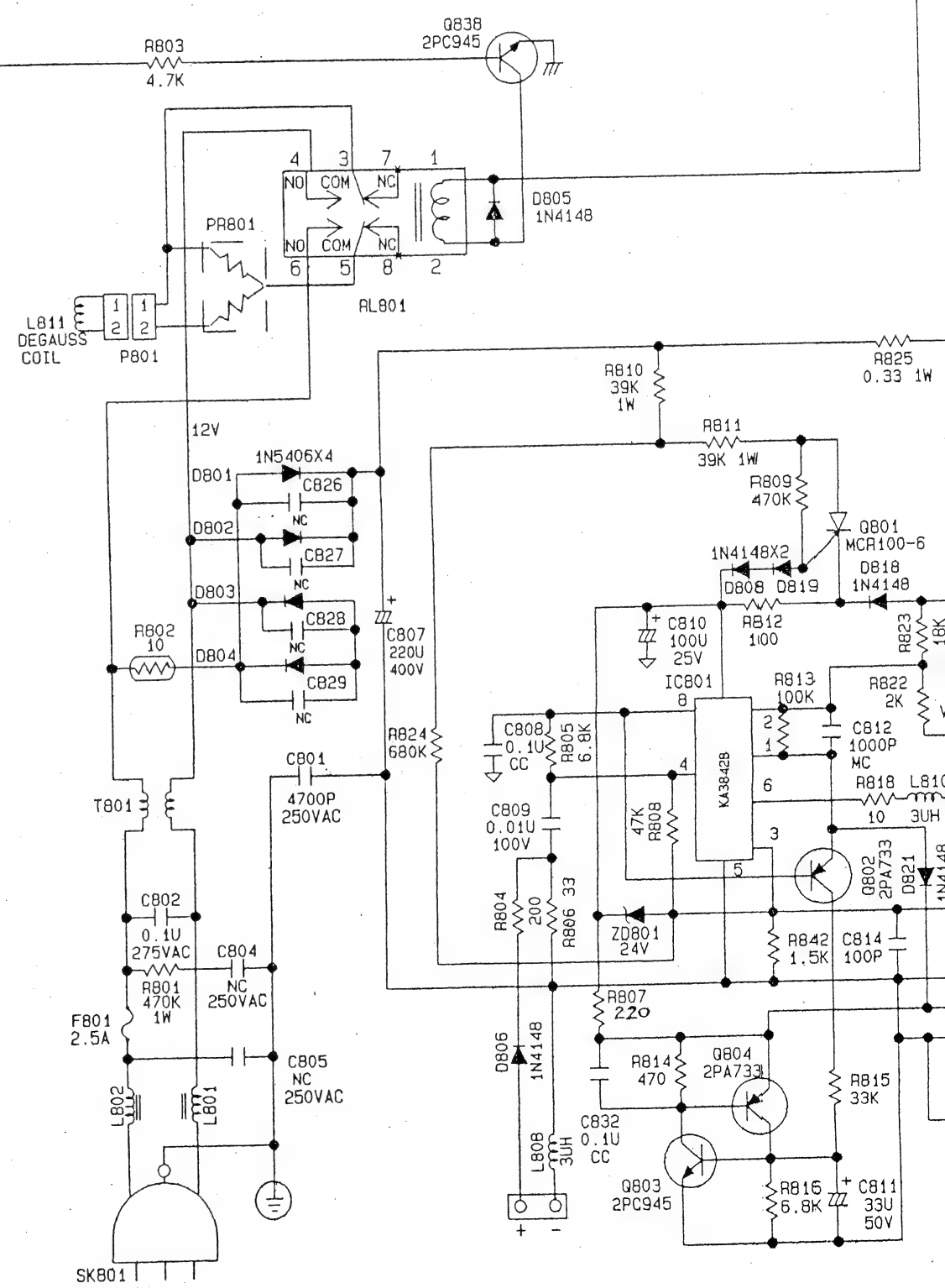
M102

SDA/DDC 10  
SCL/DDC 9  
8  
SDA/OSD 7  
SCL/OSD 6  
GND 5  
H 4  
V 3  
CLAMP 2  
5V 1

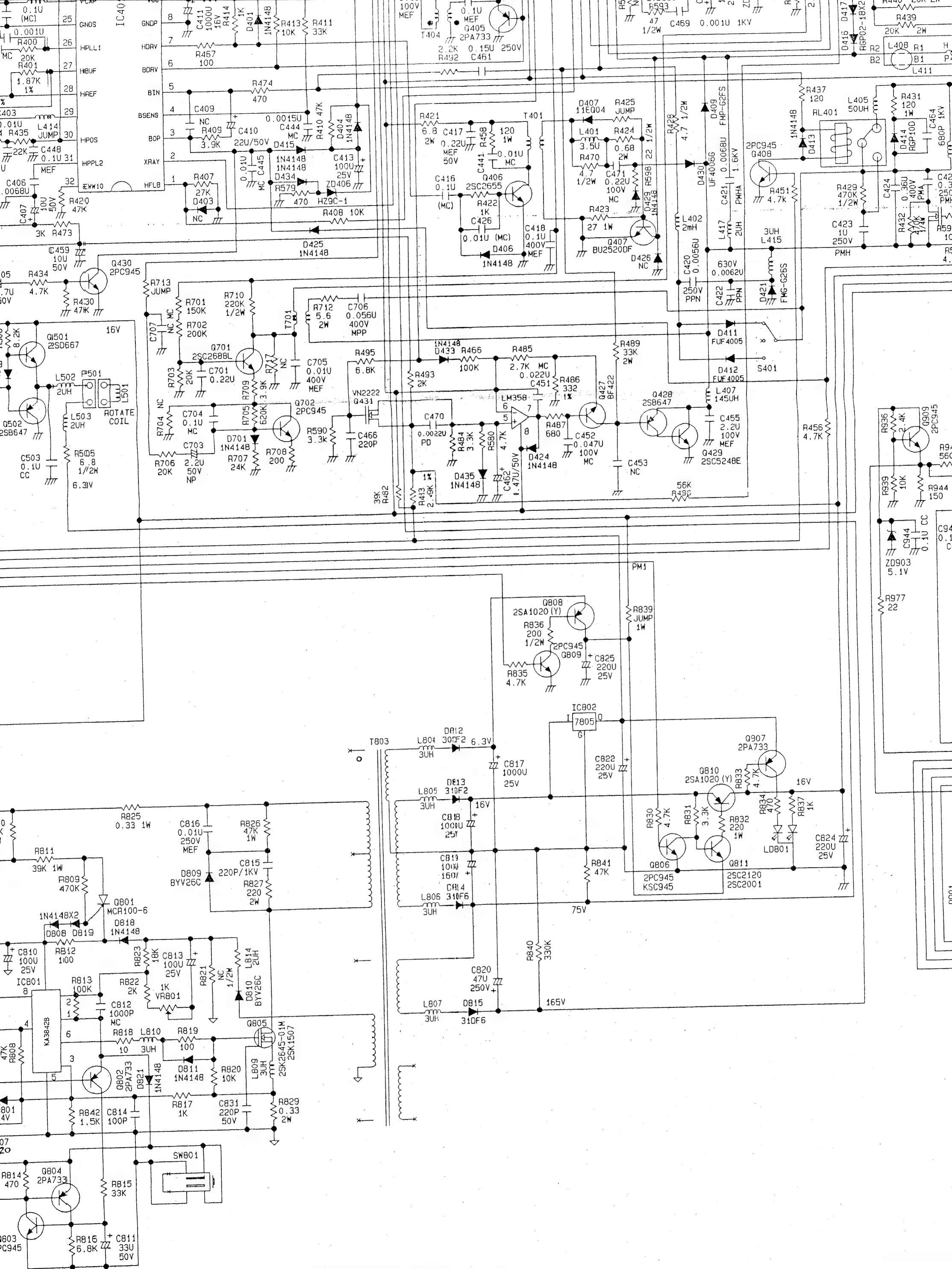


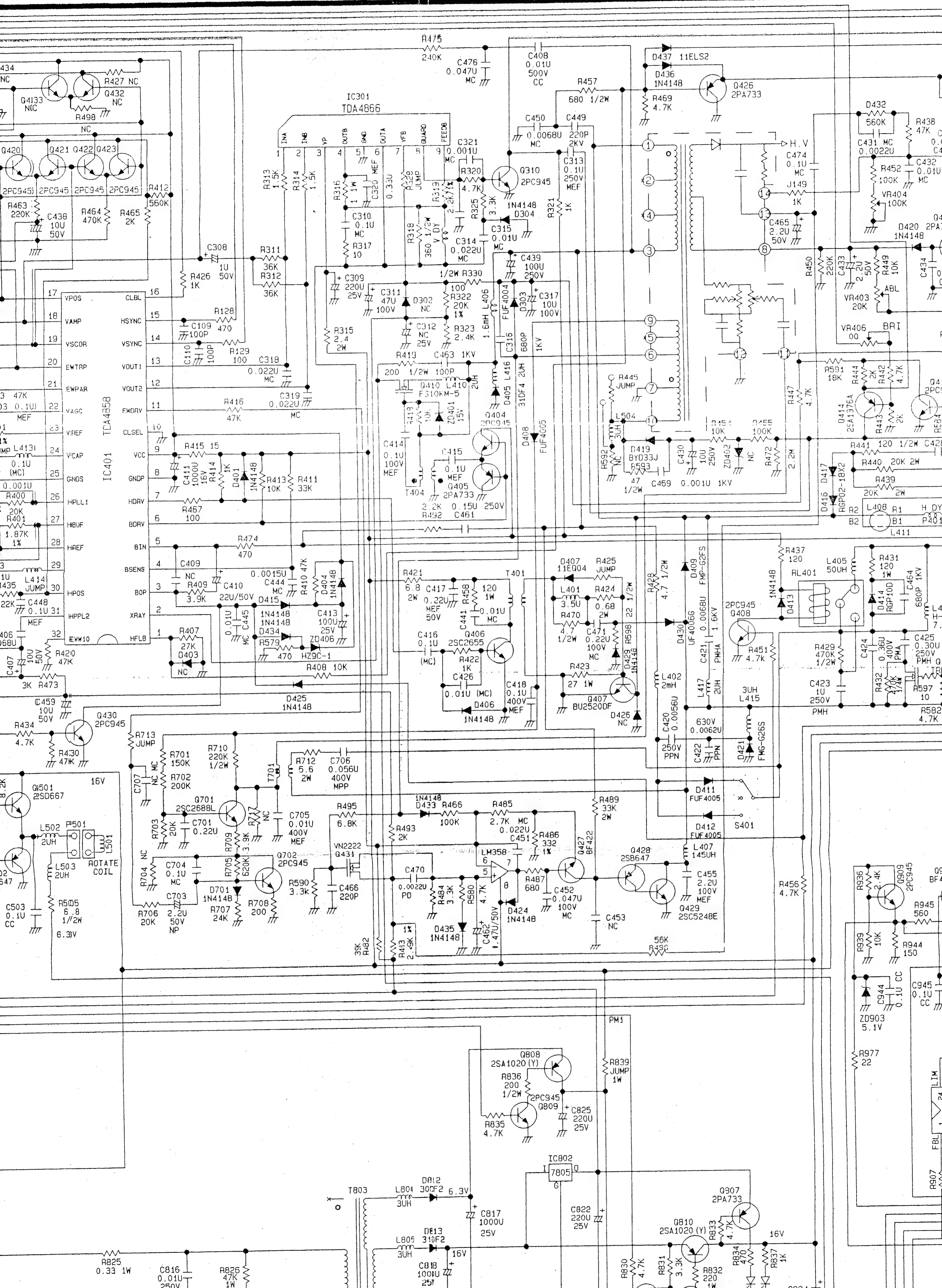


MU

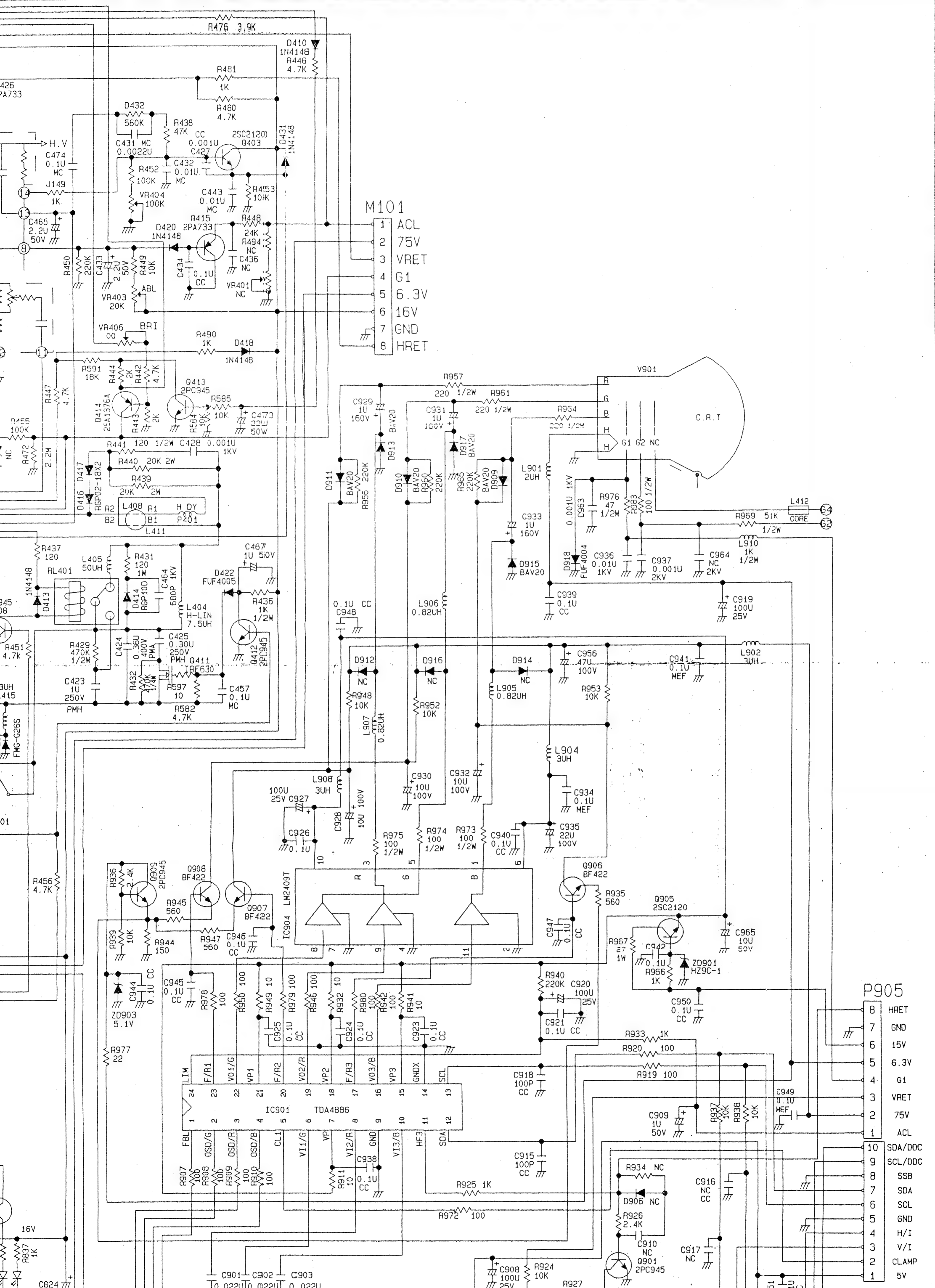


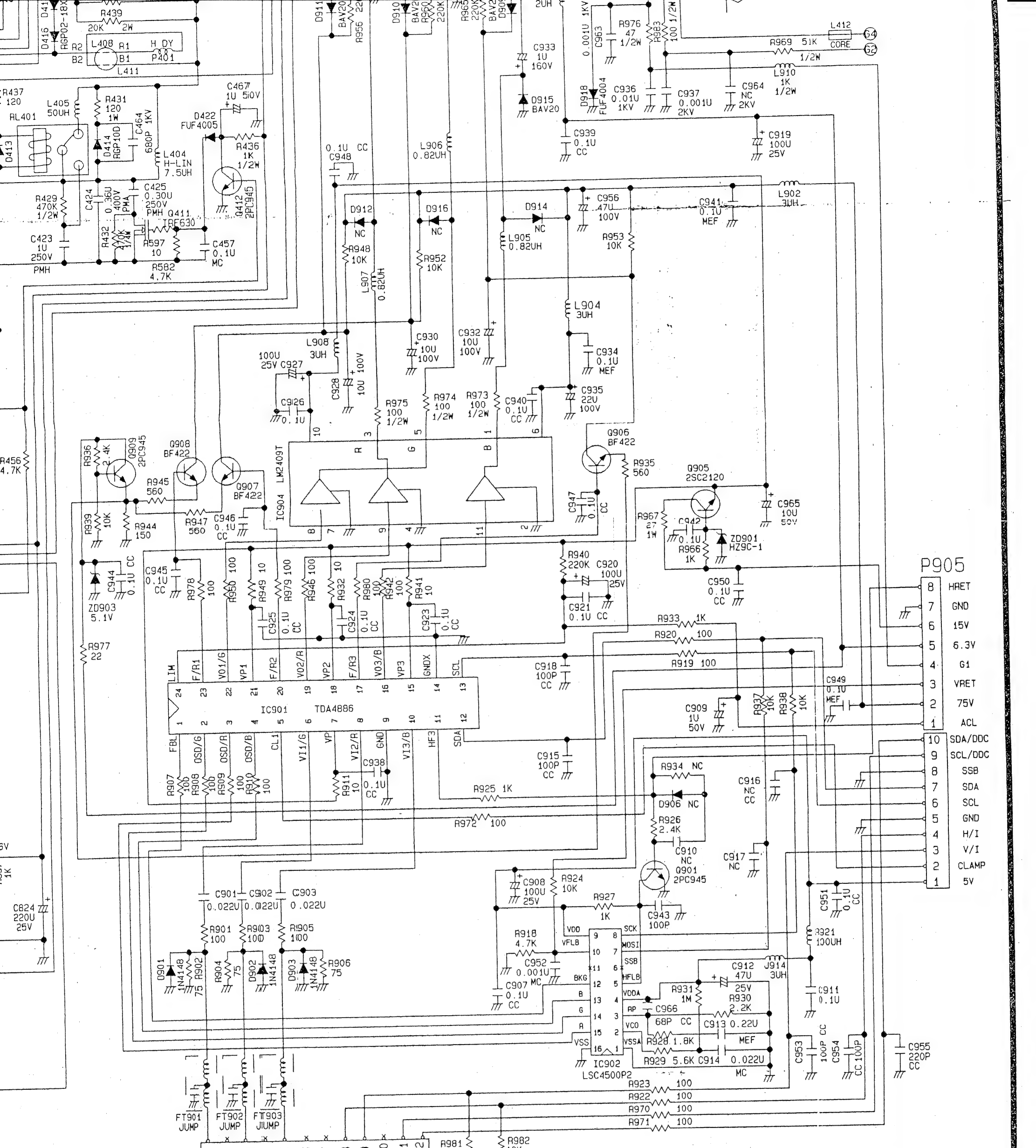
SK801











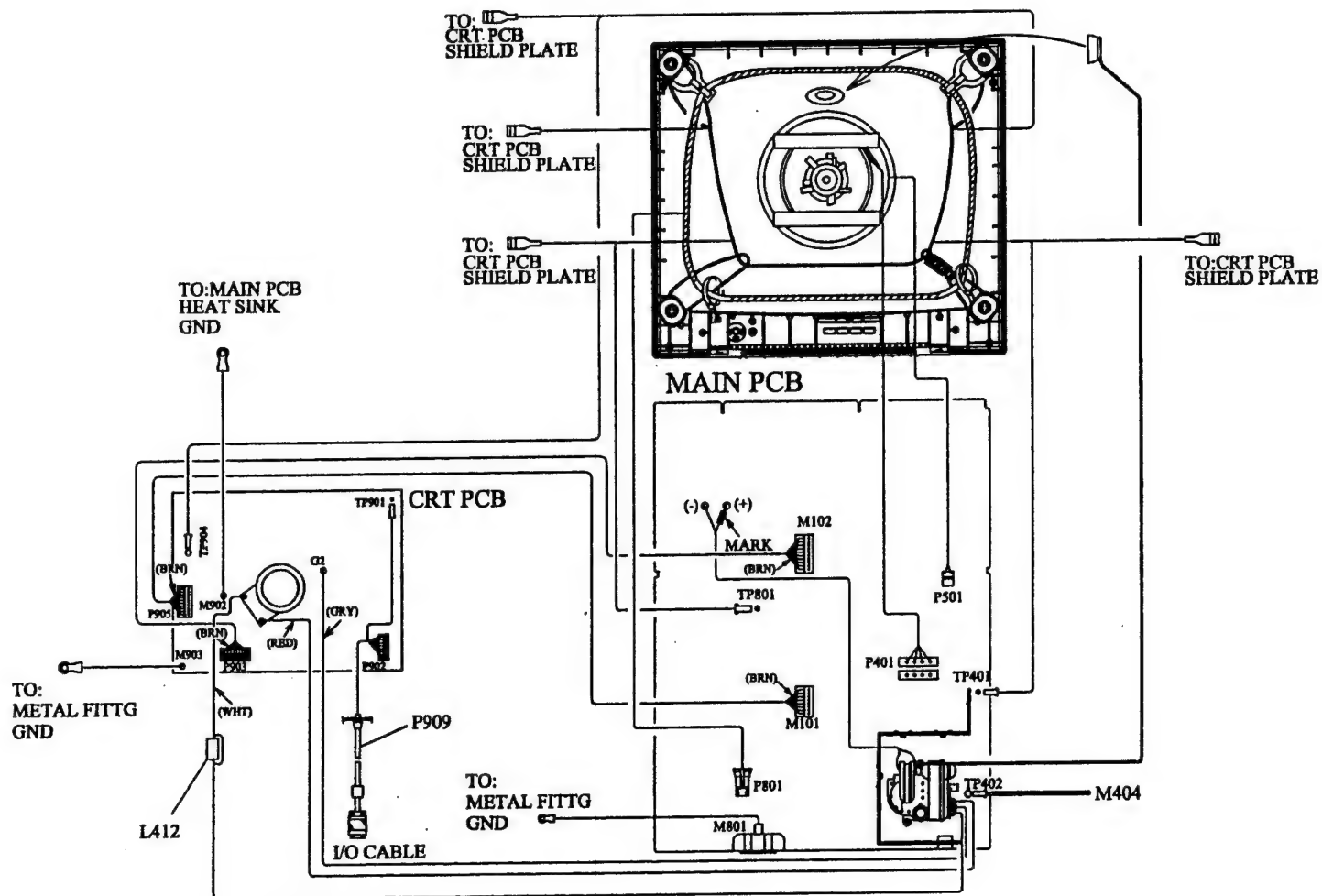
P902  
1 R  
2 GND  
3 G  
4 GND  
5 B  
6 GND  
7 GND  
8 HS  
9 VS  
10 SCL/DDC  
11 SDA/DDC  
12

P905  
8 HRET  
7 GND  
6 15V  
5 6.3V  
4 G1  
3 VRET  
2 75V  
1 ACL  
10 SDA/DDC  
9 SCL/DDC  
8 SSB  
7 SDA  
6 SCL  
5 GND  
4 H/I  
3 V/I  
2 CLAMP  
1 5V

GND		GND		HS		VS		SCL/DD00		SDA/DD00		DRAWN		CHECK		APPROVAL		ISSUE	
												林慶		Cz		Cz			

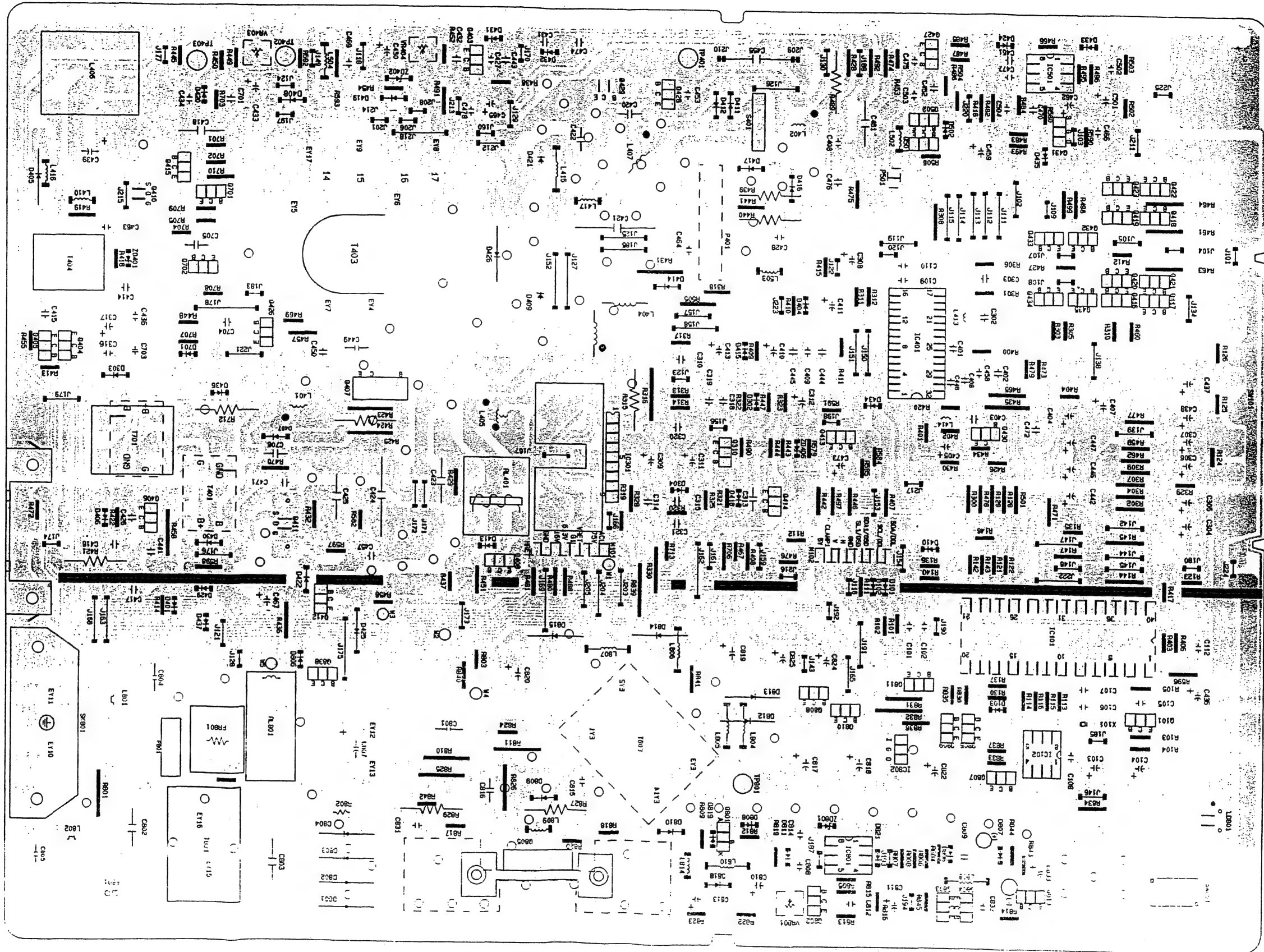
## 7. WIRING DIAGRAM

(E70)

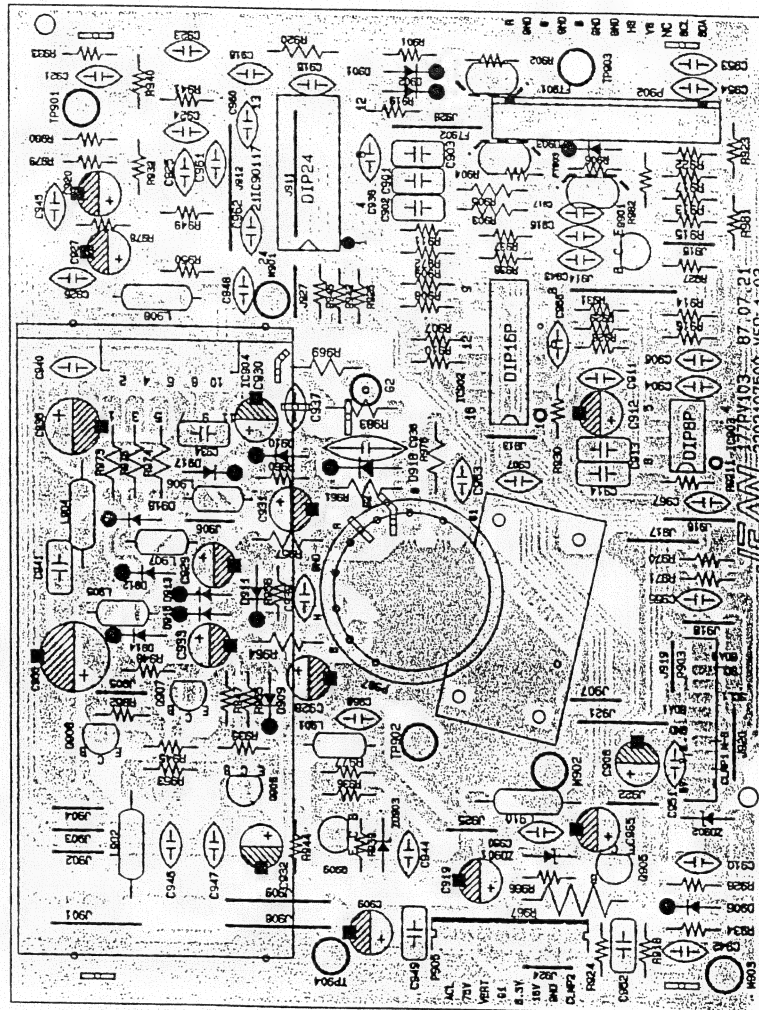


Confidential - Do Not Copy

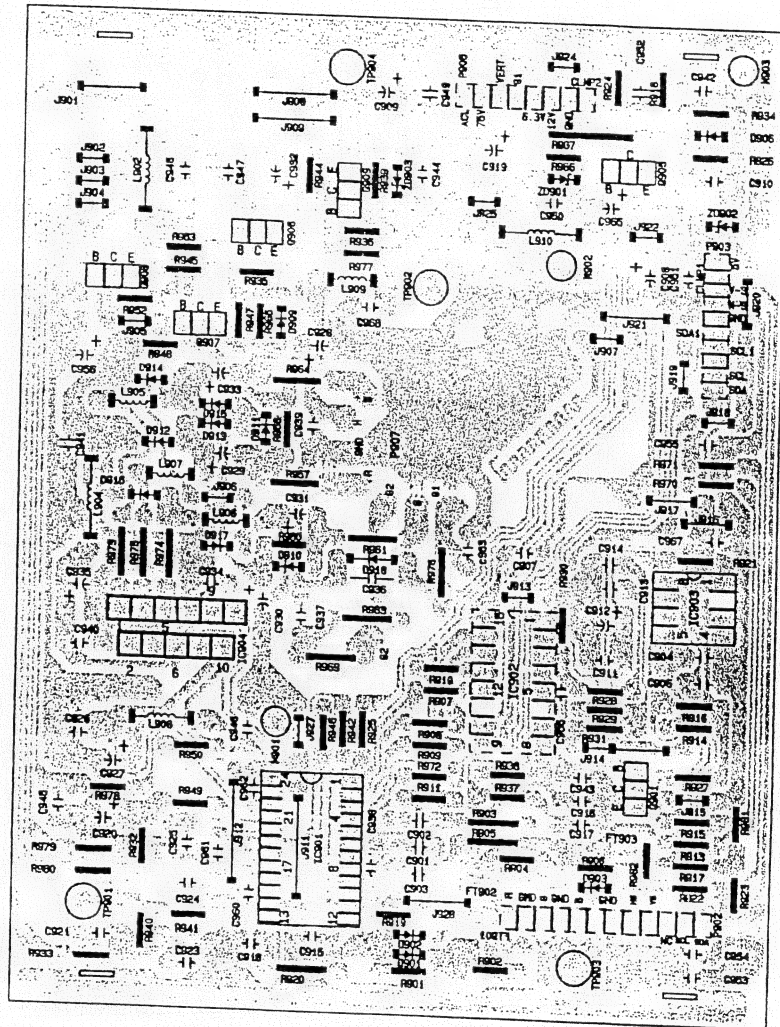




Confidential - Do Not Copy



Confidential - Do Not Copy

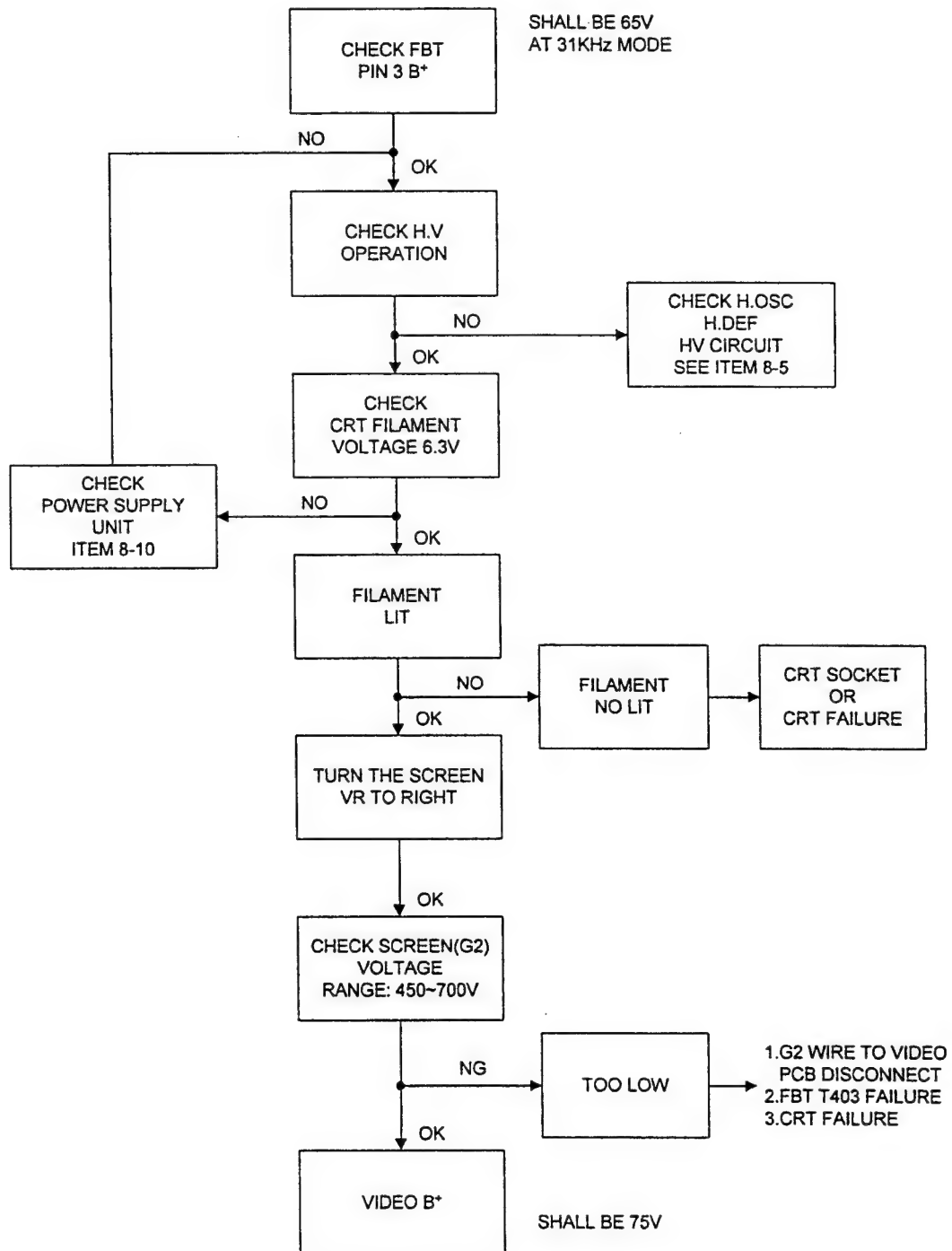


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# E70 Service Manual

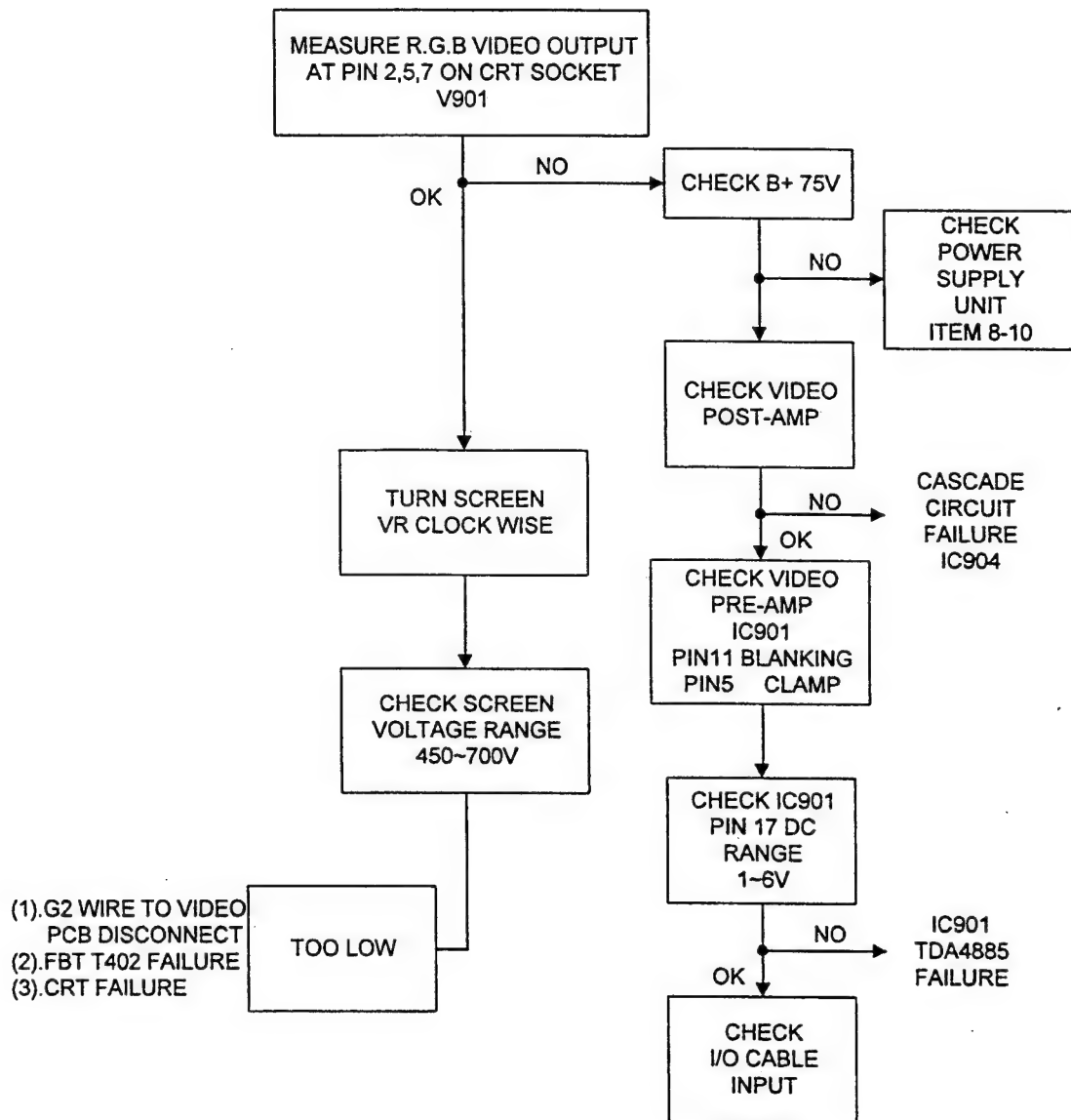
## 9. TROUBLE SHOOTING FLOW CHART

### 9-1. NO RASTER

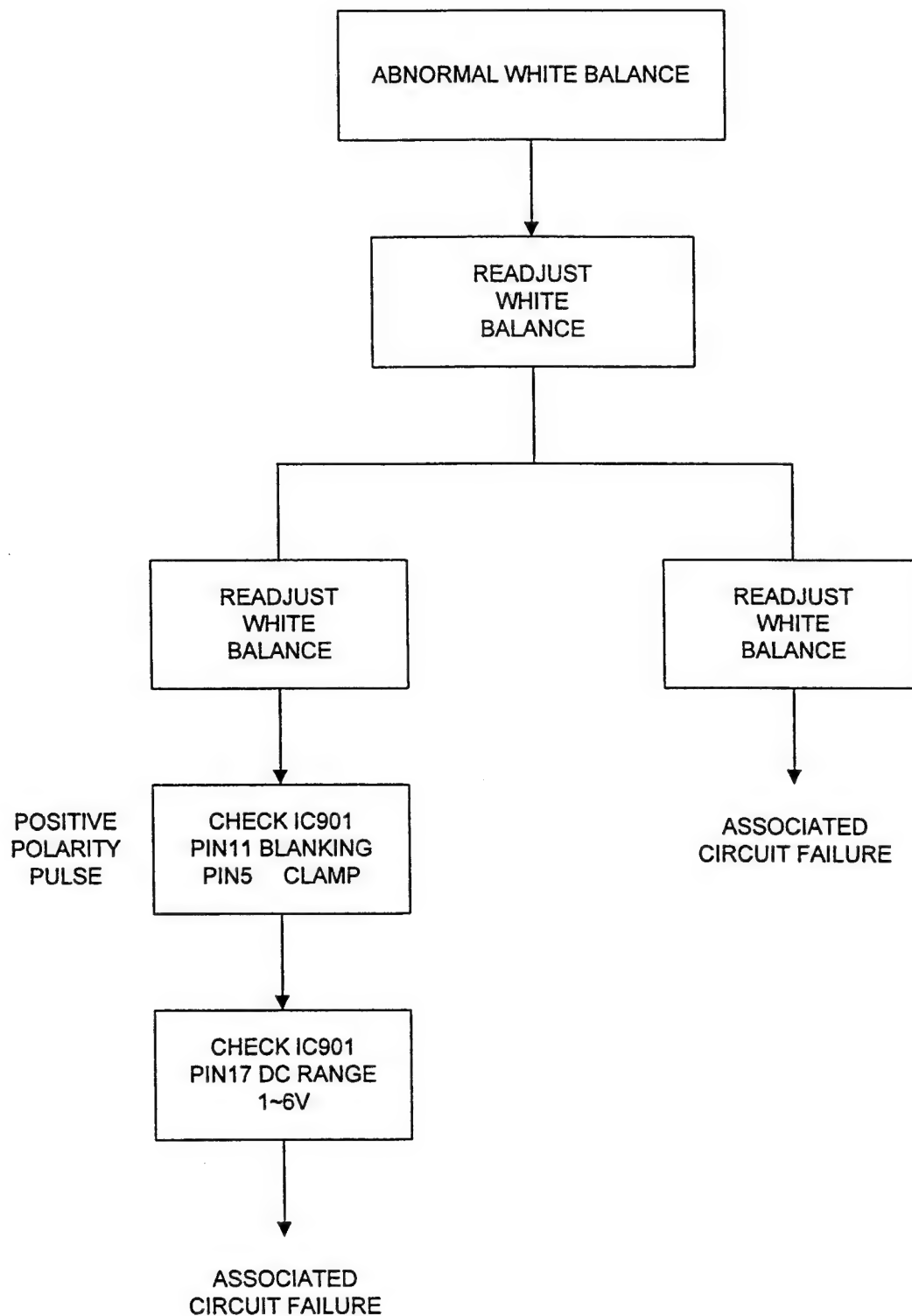


# E70 Service Manual

## 9-2. ABNORMAL VIDEO CRT-SCREEN

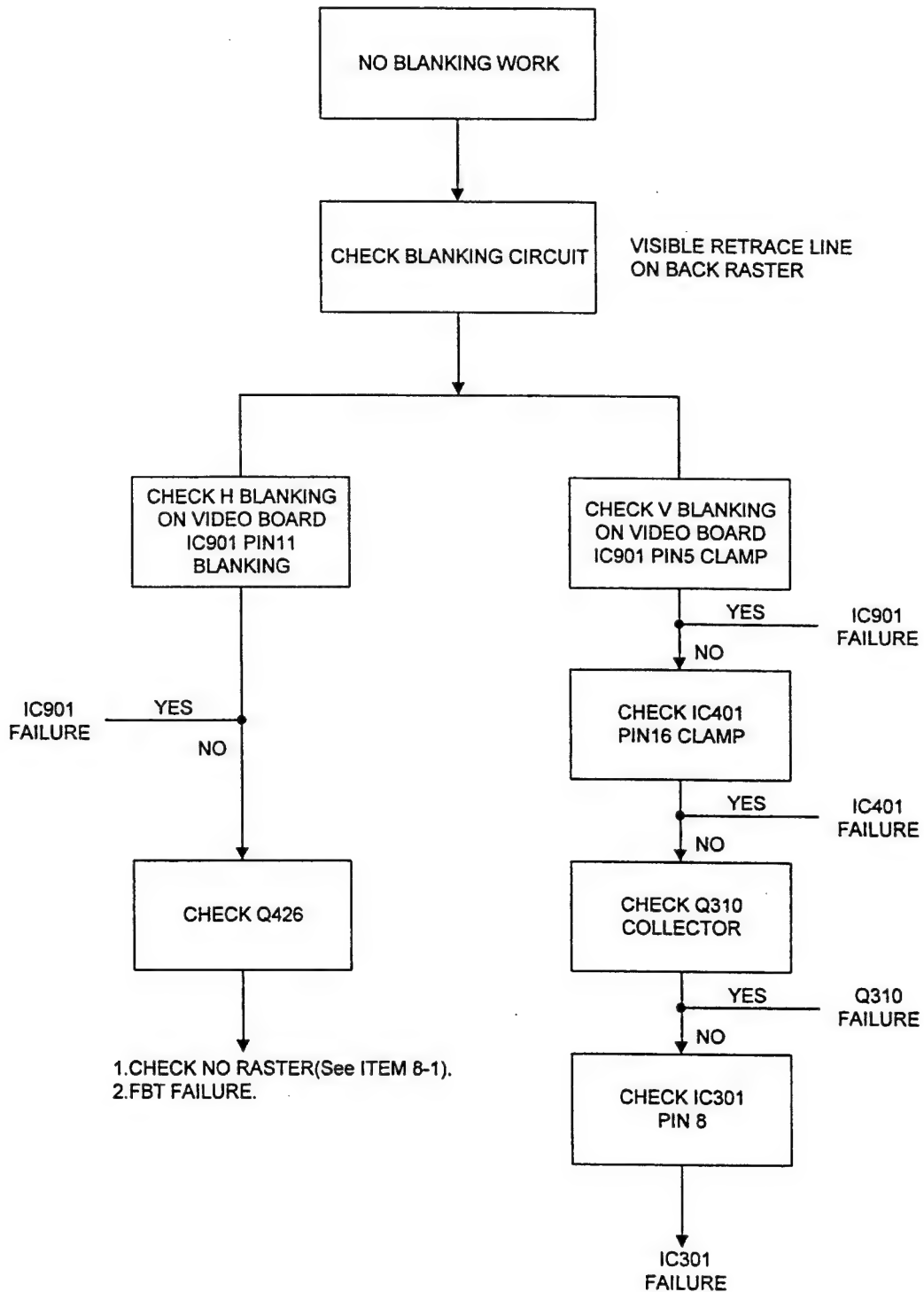


## 9-3. ABNORMAL WHITE BALANCE



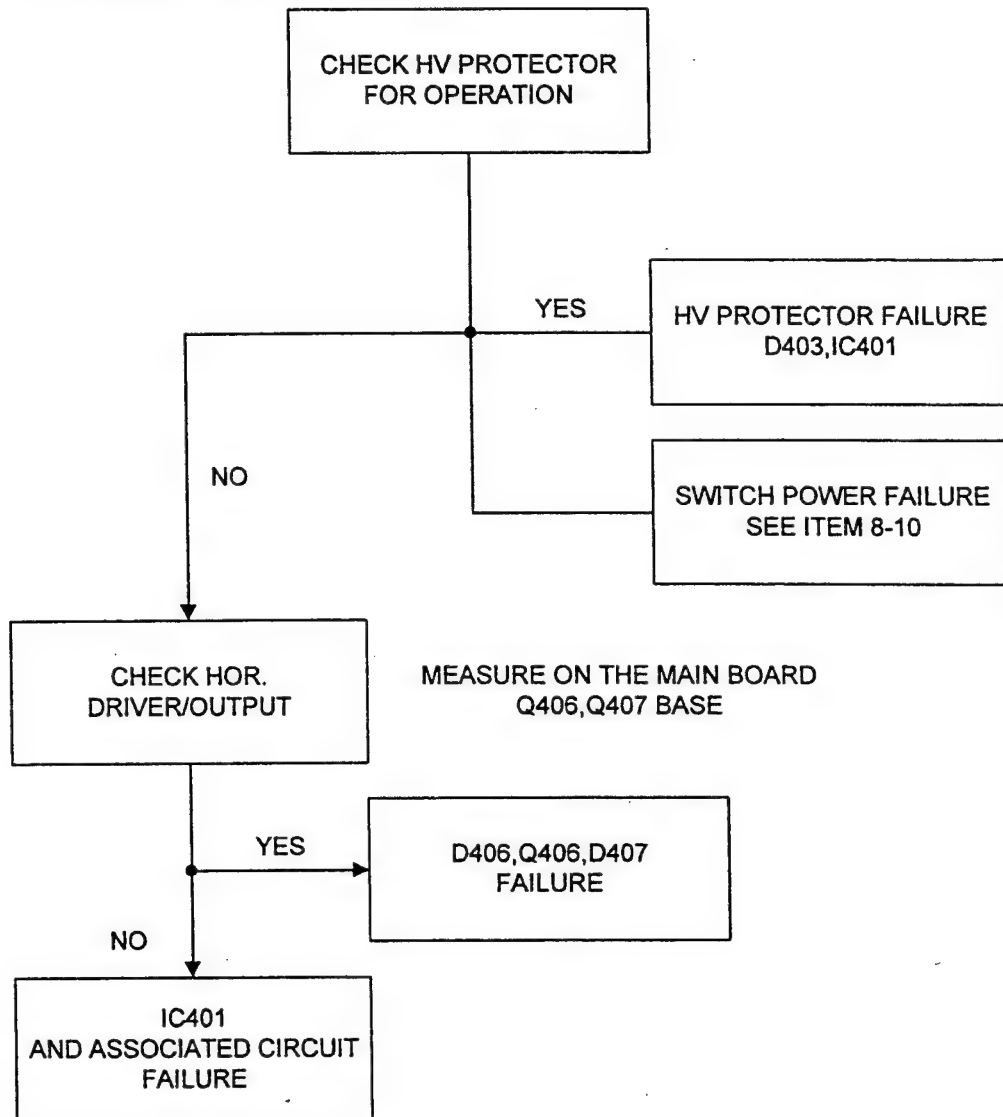
# E70 Service Manual

## 9-4. NO BLANKING WORK



## E70 Service Manual

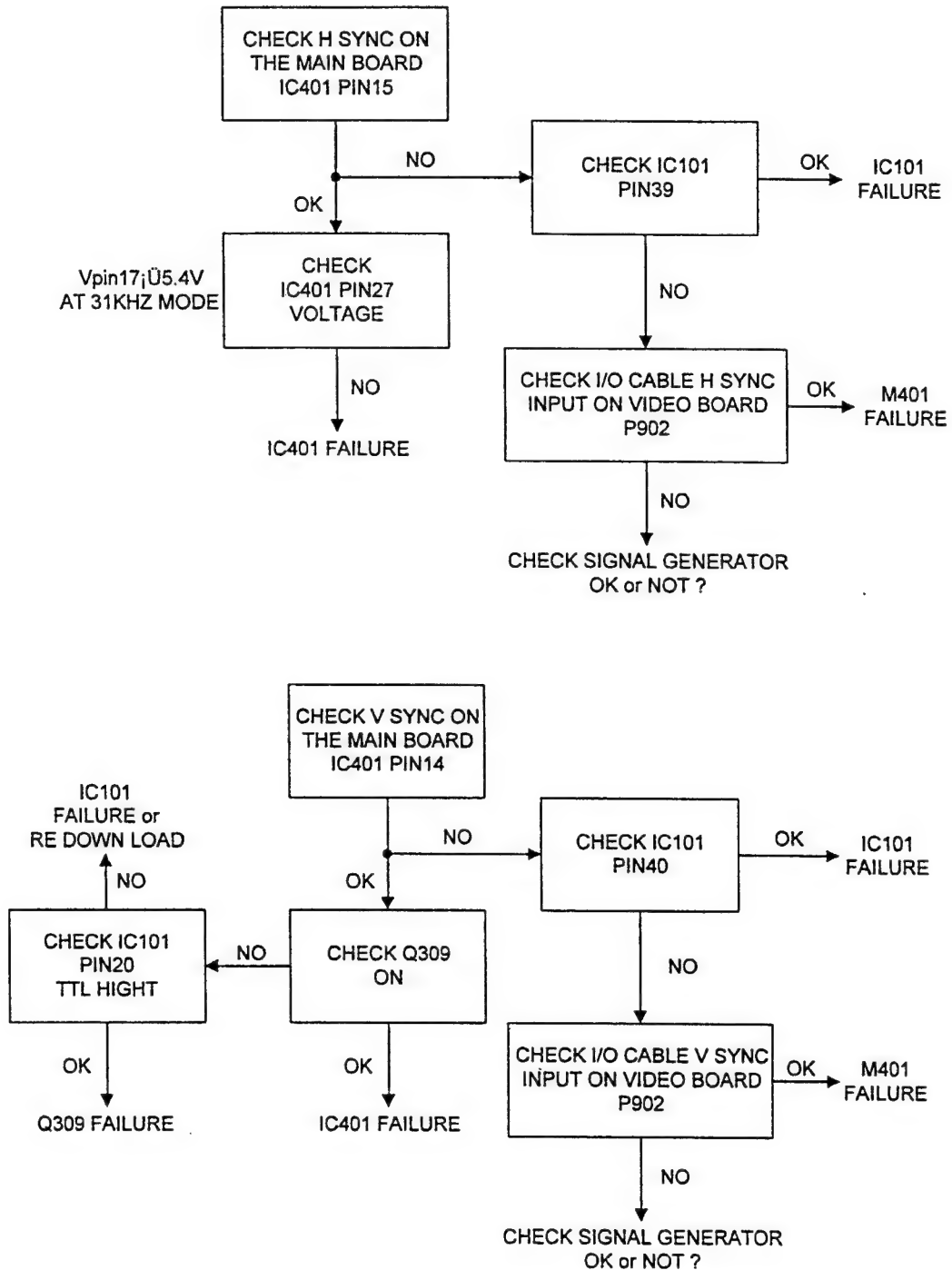
### 9-5. H.OSC/DEF/HV CIRCUIT FAULT





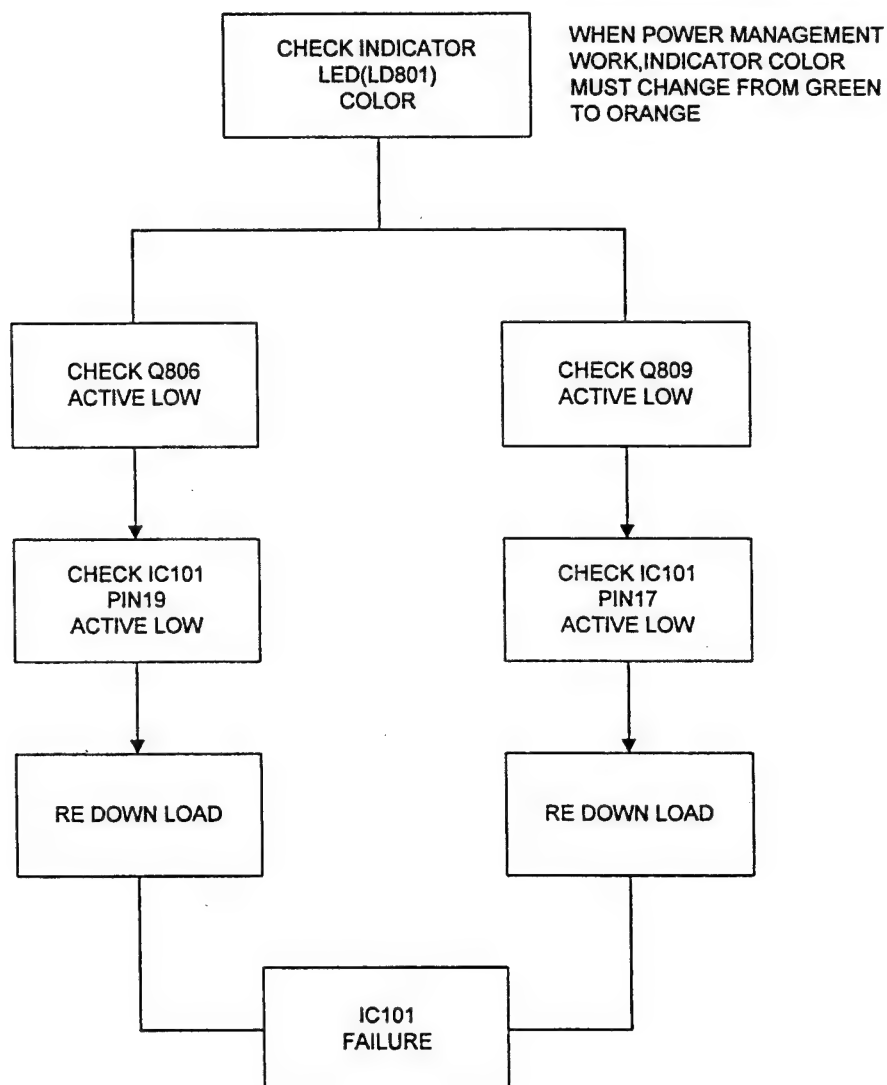
# E70 Service Manual

## 9-6. F/V CONVERTER AND UNSTABLE SYNCHRONIZATION



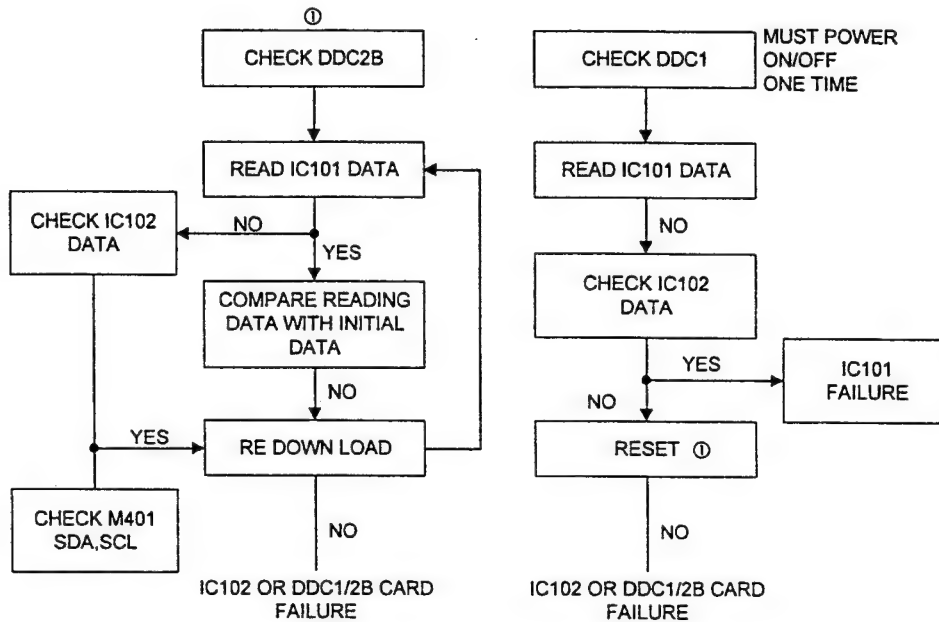
## E70 Service Manual

### 9-7. NO POWER MANAGEMENT FUNCTION

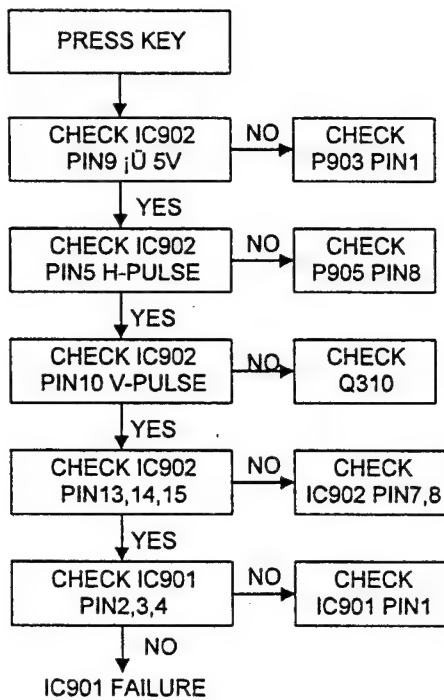


# E70 Service Manual

## 9-8. NO DDC1/DDC2B



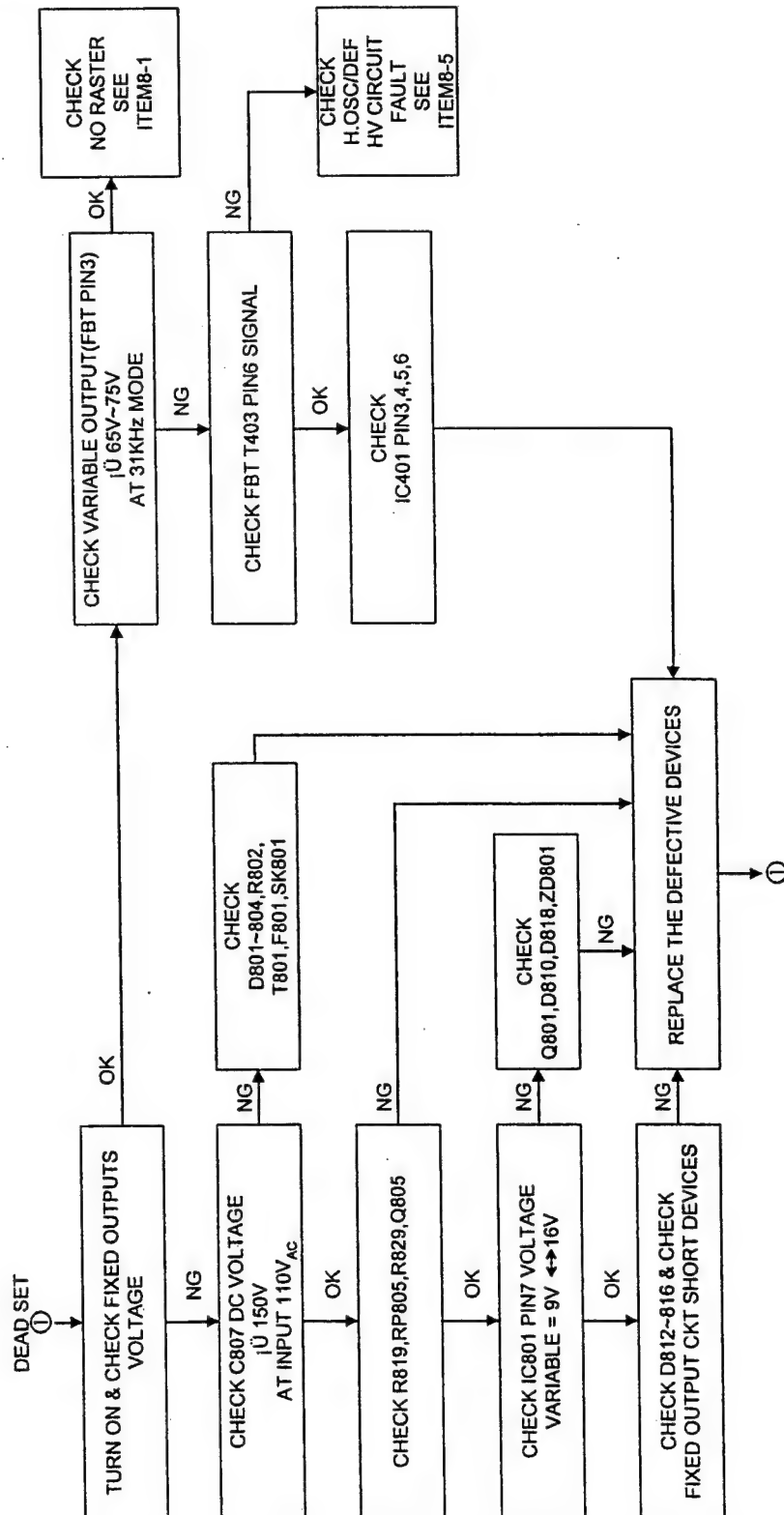
## 9-9. NO OSD FUNCTION



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## 9-10. POWER SUPPLY

POWER SUPPLY OUTPUT (A) VARIABLE OUTPUT : 65~150V(DEPENDING UPON H-SYNC FREQUENCY)  
(B) FIXED OUTPUT : 8V,15V,75V,200V



# **E70 Service Manual**

## **10. ADJUSTMENT**

### **10-1. ADJUSTMENT CONDITIONS AND PRECAUTIONS**

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.

### **10-2. MAIN ADJUSTMENTS**

NO.	FUNCTION	DESIGNATION
1.	B $\square$ 6.3V ADJ.	VR801
2.	Raster Centering ADJ.(56K)	S401
3.	Focus ADJ.	FOCUS VR. (On flyback transformer)
4.	Raster Light Output	SCREEN VR. (On flyback transformer)
5.	HV ADJ.	VR404

### **10-3. ALIGNMENT PROCEDURES**

#### **Adjustment Conditions and Precautions:**

- (1) Power supply voltage: AC 100 $\square$ 240V; 50/60 Hz.
- (2) Warm up time:  
The display must be power ON for at least 20 minutes before starting alignments. This is especially critical in color temperature and white balance adjustments.
- (3) Signals: reference the front detail specifications and timing table.  
Video : reference the front detail specifications.

#### **1. Switching Regulator Unit:**

Conditions: (a) Set timing 48KHZ 1024x768  
(b) USE cross-hatch pattern, BRI./CONT. be set to max.  
adjust VR801 to get 6.3 $\pm$ 0.05V voltage at the cathode of D812.

#### **2. Anode Voltage Unit:**

Conditions: the same as ITEM 1.  
adjust VR404 to get H.V 26 $\pm$ 0.1KV for all tube.

#### **3. RASTER CENTERING:**

Conditions: the same as ITEM 1.  
Switch S401 till the raster in the spec.

#### **4. Adjustment of White Balance**

Conditions: (a) Warm up time must be over 30 minute.  
(b) Set 48KHZ 1024x768 2 $\square$ square & raster pattern.  
(c) Degaussing one time.  
(d) Adjust H-SIZE 300 $\pm$ 4mm, V-SIZE 225 $\pm$ 4mm.

(A) Enter color alignment system.

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- (B) 1. Set 9300 mode and then adjust SCREEN VR (G2) to 1.0FL.  
 2. Enter full white pattern and start alignment system to adjust dark balance to  $X=281\pm5$   
 $Y=311\pm5$ .  
 3. disable R.G.B input and set BRI - DAC value equal to 50 and adjust SUB- BRI DAC  
 value to get light output about  $0.08\pm0.1FL$  (if impossible repeat ITEM B).  
 4. Enter 2□square pattern and adjust SUB-CONT DAC value equal to  $50\pm2.0FL$ .  
 5. Enter full white pattern and adjust ABL DAC value equal to  $32\pm0.5FL$ .  
 (C) Set 6300 mode and repeat ITEM B then get  $X=313\pm5$ ,  $Y=329\pm5$ ,  $Y=50\pm2.0FL$ .  
 (D) Set 5000 mode and repeat ITEM B then get  $X=346\pm5$ ,  $Y=359\pm5$ ,  $Y=50\pm2.0FL$ .









### 5. Focus Verification Condition:

- Conditions: (a) Set 48KHZ 1024x768 and EXT. BRIT. VR at detent, EXT. CONT. VR at  
 max.  
 (b) Use text mode pattern especially "□" character.  
 (c) Let whole picture look clearly by adjusting static and dynamic focus VR.

### 6. Display performance and geometric adjustment:

Conditions:

- (1) equipment: a. 80486 PC. with printer port.  
 b. I<sup>2</sup>C cable.  
 (2) File : MAS.EXE (Main program).  
 product file  
 system file  
 (3) Main menu: Press F12 Adjust geometry

KEY			select item
			Increase, Decrease DAC value by one step
			Big step INC, DEC DAC value
			Abort
			OK

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## 11. ELECTRICAL PARTS LIST

When you place a parts order, be sure to indicate the following data on the order:

- Location No.
- Parts No.
- Description

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
<b>CRT P.C.BOARD</b>					
C901		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C902		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C903		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C907		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C908		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C909		2333610591	CAP,MINI ELE 105°C	CE04W 1.000UF 50V	M
C911		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C912		2333447691	CAP,MINI ELE 105°C	CE04W 47.000UF 25V	M
C913		2302122491	CAP,MTL	CF93M 0.220UF 100V	J
C914		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C915		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C918		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C919		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C920		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C921		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C923		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C924		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C925		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C926		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C927		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C928		2333810691	CAP,MINI ELE 105°C	CE04W 10.000UF 100V	M
C929		2333910591	CAP,MINI ELE 105°C	CE04W 1.000UF 160V	M
C930		2333810691	CAP,MINI ELE 105°C	CE04W 10.000UF 100V	M
C931		2333910591	CAP,MINI ELE 105°C	CE04W 1.000UF 160V	M
C932		2333810691	CAP,MINI ELE 105°C	CE04W 10.000UF 100V	M
C933		2333910591	CAP,MINI ELE 105°C	CE04W 1.000UF 160V	M
C934		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C935		2333822691	CAP,MINI ELE 105°C	CE04W 22.000UF 100V	M
C936		2285710312	CAP,CER	CK45E 0.010UF 1KV	M
C937		2285210212	CAP,CER	CK45B 1000.000PF 2KV	K
C938		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C939		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C941		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C942		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C943		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C944		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C945		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C946		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C947		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C948		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C949		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C950		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C951		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C952		2291510291	CAP,MYL	CQ92M 1000.000PF 100V	K
C953		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C954		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C955		2272122191	CAP,CER	CC45CH 220.000PF 50V	J
C956		2333847612	CAP,MINI ELE 105°C	CE04W 47.000UF 100V	M
C963		2285110291	CAP,CER	CK45B 1000.000PF 1KV	K
C965		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C966		2272168091	CAP,CER	CC45CH 68.000PF 50V	J
D901		2363600195	DIODE,SWITCH	1N4148	
D902		2363600195	DIODE,SWITCH	1N4148	
D903		2363600195	DIODE,SWITCH	1N4148	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D909	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D909	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D910	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D910	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D911	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D911	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D913	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D913	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D915	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D915	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D917	RA	2363600795	DIODE,SWITCH	BAV20(150V)	PHILIPS
D917	RB	2363600895	DIODE,SWITCH	BAV21 VR200V	PHILIPS
D918		2363219895	DIODE,RECT	FUF4004	FAGOR
IC901		2365320700	IC,LINEAR	TDA4886	PHILIPS
IC902		2365410700	IC,DIGITAL	LSC4500P2	MOTOROLA
IC904		2365320900	IC,LINEAR	LM2409T	NS
J914		2379101495	FERRITE CORE	3.5X9X0.8	
L901		2379101595	FERRITE CORE	3.5X4.5X0.8	
L902		2379101495	FERRITE CORE	3.5X9X0.8	
L904		2379101495	FERRITE CORE	3.5X9X0.8	
L905		2372282895	COIL,PEAKING	0.82UH K R<0.14 I 875mA	
L906		2372282895	COIL,PEAKING	0.82UH K R<0.14 I 875mA	
L907		2372282895	COIL,PEAKING	0.82UH K R<0.14 I 875mA	
L908		2379101495	FERRITE CORE	3.5X9X0.8	
L910		2232610295	RES,CBN 1/2	RD 1/2W 1.00K	J
M902		2427307006	LUG W/WIRE	B-IN/4□RING 1007#18 150L BK	
M903		2427307006	LUG W/WIRE	B-IN/4□RING 1007#18 150L BK	
P902		2404390211	CONNECTOR	JWT A2501WV2-12P 12PIN P=2.5mm	
P903		2404390109	CONNECTOR	JWT A2001WV2-10P 10PIN P=2.0MM	
P905		2404390207	CONNECTOR	JWT A2501WV2-8P 8PIN P=2.5mm	
P907	RA	2407402800	SOCKET	CRT SOCKET HPS0720-011100	
P907	RB	2407402900	SOCKET	CRT SOCKET CVT3280-2202 SMK	
Q901	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q901	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q905		2361301291	XISTOR,NPN R	2SC2120(Y)	TOSHIBA
Q906		2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q907		2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q908		2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q909	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q909	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
R901		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R902		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R903		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R904		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R905		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R906		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R907		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R908		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R909		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R910		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R911		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R918		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R919		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R920		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R921		2372210195	COIL,PEAKING	100.00UH K R<4.10 I 165mA	
R922		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R923		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R924		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R925		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R926		2233424295	RES,CBN 1/4 S	RD 1/4WS 2.40K	J
R927		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R928		2233418295	RES,CBN 1/4 S	RD 1/4WS 1.80K	J
R929		2233456295	RES,CBN 1/4 S	RD 1/4WS 5.60K	J
R930		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J



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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R931		2233410595	RES,CBN 1/4 S	RD 1/4WS 1.00M J	
R932		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00 J	
R933		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K J	
R935		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00 J	
R936		2233424295	RES,CBN 1/4 S	RD 1/4WS 2.40K J	
R937		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R938		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R939		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R940		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K J	
R941		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00 J	
R942		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R944		2233415195	RES,CBN 1/4 S	RD 1/4WS 150.00 J	
R945		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00 J	
R946		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R947		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00 J	
R948		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R949		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00 J	
R950		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R952		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R953		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R956		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K J	
R957		2232622195	RES,CBN 1/2	RD 1/2W 220.00 J	
R960		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K J	
R961		2232622195	RES,CBN 1/2	RD 1/2W 220.00 J	
R964		2232622195	RES,CBN 1/2	RD 1/2W 220.00 J	
R965		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K J	
R966		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K J	
R967		2235427003	RES,MTL 1	RS 1W 27.00 J	
R969		2232651395	RES,CBN 1/2	RD 1/2W 51.00K J	
R970		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R971		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R972		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R973		2232610195	RES,CBN 1/2	RD 1/2W 100.00 J	
R974		2232610195	RES,CBN 1/2	RD 1/2W 100.00 J	
R975		2232610195	RES,CBN 1/2	RD 1/2W 100.00 J	
R976		2232647095	RES,CBN 1/2	RD 1/2W 47.00 J	
R977		2233422095	RES,CBN 1/4 S	RD 1/4WS 22.00 J	
R978		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R979		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R980		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00 J	
R981		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R982		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R983		2232610195	RES,CBN 1/2	RD 1/2W 100.00 J	
TP901		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP904		2404200100	PIN PLUG	UZ-006P(1P-A)	
U002		2202107500	PC BOARD	JD177P CRT 94V0 140X110 V1.03	
ZD901		2363510895	DIODE,ZENER	HZ9C-1 8.9-9.3V 0.5W HITACHI	
ZD903		2363500995	DIODE,ZENER	HZ5C-2 5.0-5.2V 0.5W HITACHI	

## MAIN P.C.BOARD

C101	2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C102	2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C103	2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C104	2333610691	CAP,MINI ELE 105°C	CE04W	10.000UF	50V	M
C105	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C106	2272136091	CAP,CER	CC45CH	36.000PF	50V	J
C107	2272136091	CAP,CER	CC45CH	36.000PF	50V	J
C108	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C109	2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C110	2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C112	2291527291	CAP,MYL	CQ92M	2700.000PF	100V	K
C302	2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C303	2302210491	CAP,MTL	CF93M	0.100UF	100V	K

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
C304		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C305		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C306		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C307		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C308		2333610591	CAP,MINI ELE 105°C	CE04W 1.000UF 50V	M
C309		2333422791	CAP,MINI ELE 105°C	CE04W 220.000UF 25V	M
C310		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C311		2333847612	CAP,MINI ELE 105°C	CE04W 47.000UF 100V	M
C313		2303210412	CAP,MTL	CF93M 0.100UF 250V	K
C314		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C315		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C316		2285168191	CAP,CER	CK45B 680.000PF 1KV	K
C317		2333810691	CAP,MINI ELE 105°C	CE04W 10.000UF 100V	M
C318		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C319		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C320		2302133491	CAP,MTL	CF93M 0.330UF 100V	J
C321		2291510291	CAP,MYL	CQ92M 1000.000PF 100V	K
C401		2291510291	CAP,MYL	CQ92M 1000.000PF 100V	K
C402		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C403		2295210391	CAP,PPP	CQ93T 0.010UF 100V	G
C404		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C405		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C406		2291568291	CAP,MYL	CQ92M 6800.000PF 100V	K
C407		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C408		2283610391	CAP,CER	CK45E 0.010UF 500V	M
C410		2333622691	CAP,MINI ELE 105°C	CE04W 22.000UF 50V	M
C411		2333310812	CAP,MINI ELE 105°C	CE04W 1000.000UF 16V	M
C413		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C414		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C415		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C416		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C417		2302122491	CAP,MTL	CF93M 0.220UF 100V	J
C418		2304210412	CAP,MTL	CF93M 0.100UF 400V	K
C420		2296456212	CAP,PPP	CQ93T 5600.000PF 250V	J
C421	RA	2310368212	CAP,MTL PHA	CF93T 6800.000PF 2000	V J
C421	RB	2310168212	CAP,MTL	CF93T 6800.000PF 2000	V J
C422		2296662212	CAP,PPP	CQ93T 6200.000PF 630V	J
C423		2309310512	CAP,MTL	CF93T 1.000UF 250V	J
C424	RA	2311536412	CAP,MTL	CF93T 0.360UF 400V	J
C424	RB	2311136412	CAP,MTL	CF93T 0.360UF 400V	J
C425		2309330412	CAP,MTL	CF93T 0.300UF 250V	J
C426		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C427		2291510291	CAP,MYL	CQ92M 1000.000PF 100V	K
C428		2285110291	CAP,CER	CK45B 1000.000PF 1KV	K
C430		2334110612	CAP,MINI ELE 105°C	CE04W 10.000UF 250V	M
C431		2291522291	CAP,MYL	CQ92M 2200.000PF 100V	K
C432		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C433		2333622591	CAP,MINI ELE 105°C	CE04W 2.200UF 50V	M
C434		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C435		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C436		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C437		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C438		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C439		2334110712	CAP,MINI ELE 105°C	CE04W 100.000UF 250V	M
C441		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C442		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C443		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C444		2291515291	CAP,MYL	CQ92M 1500.000PF 100V	K
C445		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C446		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C447		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C448		2302210491	CAP,MTL	CF93M 0.100UF 100V	K
C449		2286122112	CAP,CER	CK45BN 220.000PF 2KV	K
C450		2291568291	CAP,MYL	CQ92M 6800.000PF 100V	K

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
C451		2291522391	CAP,MYL	CQ92M 0.022UF 100V	K
C452		2291547391	CAP,MYL	CQ92M 0.047UF 100V	K
C455		2302233512	CAP,MTL	CF93M 3.300UF 100V	K
C457		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C458		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C459		2333610691	CAP,MINI ELE 105°C	CE04W 10.000UF 50V	M
C461		2303215412	CAP,MTL	CF93M 0.150UF 250V	K
C462		2333647491	CAP,MINI ELE 105°C	CE04W 0.470UF 50V	M
C463		2285110191	CAP,CER	CK45B 100.000PF 1KV	K
C464		2285168191	CAP,CER	CK45B 680.000PF 1KV	K
C465		2333622591	CAP,MINI ELE 105°C	CE04W 2.200UF 50V	M
C466		2272122191	CAP,CER	CC45CH 220.000PF 50V	J
C467		2333610591	CAP,MINI ELE 105°C	CE04W 1.000UF 50V	M
C469		2285110291	CAP,CER	CK45B 1000.000PF 1KV	K
C470		2295222291	CAP,PPP	CQ93T 2200.000PF 100V	G
C471		2291522491	CAP,MYL	CQ92M 0.220UF 100V	K
C472		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C473		2333622691	CAP,MINI ELE 105°C	CE04W 22.000UF 50V	M
C474		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C476		2291547391	CAP,MYL	CQ92M 0.047UF 100V	K
C501		2333647591	CAP,MINI ELE 105°C	CE04W 4.700UF 50V	M
C502		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C503		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C504		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C701		2291522491	CAP,MYL	CQ92M 0.220UF 100V	K
C703		2320622591	CAP,ELE NP 105°C	CE04W 2.200UF 50V	M
C704		2291510491	CAP,MYL	CQ92M 0.100UF 100V	K
C705		2307410312	CAP,MTL	CF93T 0.010UF 400V	J
C706		2307456312	CAP,MTL	CF93T 0.056UF 400V	J
C801		2287247212	CAP,CER	CK45F 4700.000PF 250VAC	M
C802		2300810401	CAP,MTL	0.100UF 275V	M
C807		2352522714	CAP,ELE 85°C	CE69W 220.000UF 400V	M
C808		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
C809		2291510391	CAP,MYL	CQ92M 0.010UF 100V	K
C810		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C811		2333633691	CAP,MINI ELE 105°C	CE04W 33.000UF 50V	M
C812		2291510291	CAP,MYL	CQ92M 1000.000PF 100V	K
C813		2333410791	CAP,MINI ELE 105°C	CE04W 100.000UF 25V	M
C814		2272110191	CAP,CER	CC45CH 100.000PF 50V	J
C815		2285122191	CAP,CER	CK45B 220.000PF 1KV	K
C816		2303210312	CAP,MTL	CF93M 0.010UF 250V	K
C817		2333410812	CAP,MINI ELE 105°C	CE04W 1000.000UF 25V	M
C818		2333410812	CAP,MINI ELE 105°C	CE04W 1000.000UF 25V	M
C819		2333910712	CAP,MINI ELE 105°C	CE04W 100.000UF 160V	M
C820		2334147612	CAP,MINI ELE 105°C	CE04W 47.000UF 250V	M
C822		2333422791	CAP,MINI ELE 105°C	CE04W 220.000UF 25V	M
C824		2333422791	CAP,MINI ELE 105°C	CE04W 220.000UF 25V	M
C825		2333422791	CAP,MINI ELE 105°C	CE04W 220.000UF 25V	M
C831		2272122191	CAP,CER	CC45CH 220.000PF 50V	J
C832		2281410491	CAP,CER	CK45F 0.100UF 50V	Z
D101		2363600195	DIODE,SWITCH	1N4148	
D102		2363600195	DIODE,SWITCH	1N4148	
D103		2363600195	DIODE,SWITCH	1N4148	
D303	RA	2363219895	DIODE,RECT	FUF4004	FAGOR
D303	RB	2363219795	DIODE,RECT	10ELS 4	IR(NI)
D304		2363600195	DIODE,SWITCH	1N4148	
D401		2363600195	DIODE,SWITCH	1N4148	
D404		2363600195	DIODE,SWITCH	1N4148	
D405		2363212012	DIODE,RECT	31DF4 3.0A 400V	
D406		2363600195	DIODE,SWITCH	1N4148	
D407	RA	2363220895	DIODE,RECT	11EQ04	IR(NI)
D407	RB	2363222195	DIODE,RECT	SB140	PEC
D408	RA	2363219995	DIODE,RECT	FUF4005	FAGOR
D408	RB	2363221495	DIODE,RECT	UF4005G	PEC.

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D409	RA	2363214300	DIODE,RECT	FMP-G2FS	SANKEN
D409	RB	2363213800	DIODE,RECT	5TUZ47C TR 1US 1 5A	TOSHIBA
D410		2363600195	DIODE,SWITCH	1N4148	
D411	RA	2363219995	DIODE,RECT	FUF4005	FAGOR
D411	RB	2363219195	DIODE,RECT	RGP10J	GI
D411	RC	2363221495	DIODE,RECT	UF4005G	PEC.
D412	RA	2363219995	DIODE,RECT	FUF4005	FAGOR
D412	RB	2363219195	DIODE,RECT	RGP10J	GI
D412	RC	2363221495	DIODE,RECT	UF4005G	PEC.
D413		2363600195	DIODE,SWITCH	1N4148	
D414	RA	2363206495	DIODE,RECT	RGP10D	FAGOR
D414	RB	2363221995	DIODE,RECT	PG102R	PEC
D415		2363600195	DIODE,SWITCH	1N4148	
D416		2363215195	DIODE,RECT	RGP02-18E	GI
D417		2363215195	DIODE,RECT	RGP02-18E	GI
D418		2363600195	DIODE,SWITCH	1N4148	
D419	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D419	RB	2363219995	DIODE,RECT	FUF4005	FAGOR
D420		2363600195	DIODE,SWITCH	1N4148	
D421		2363214500	DIODE,RECT	FMG-G26S	SANKEN
D422		2363219995	DIODE,RECT	FUF4005	FAGOR
D424		2363600195	DIODE,SWITCH	1N4148	
D425		2363600195	DIODE,SWITCH	1N4148	
D429		2363600195	DIODE,SWITCH	1N4148	
D430		2363221895	DIODE,RECT	UF4006G	PEC
D431		2363600195	DIODE,SWITCH	1N4148	
D432		2233456495	RES,CBN 1/4 S	RD 1/4WS 560.00K	J
D433		2363600195	DIODE,SWITCH	1N4148	
D434		2363600195	DIODE,SWITCH	1N4148	
D436		2363600195	DIODE,SWITCH	1N4148	
D437		2363219695	DIODE,RECT	10ELS 2	IR(NI)
D502		2363600195	DIODE,SWITCH	1N4148	
D701		2363600195	DIODE,SWITCH	1N4148	
D801	RA	2363216812	DIODE,RECT	1N5406	TSC
D801	RB	2363217112	DIODE,RECT	1N5406	CTC
D801	RC	2363222012	DIODE,RECT	PG5406	PEC
D802	RA	2363216812	DIODE,RECT	1N5406	TSC
D802	RB	2363217112	DIODE,RECT	1N5406	CTC
D802	RC	2363222012	DIODE,RECT	PG5406	PEC
D803	RA	2363216812	DIODE,RECT	1N5406	TSC
D803	RB	2363217112	DIODE,RECT	1N5406	CTC
D803	RC	2363222012	DIODE,RECT	PG5406	PEC
D804	RA	2363216812	DIODE,RECT	1N5406	TSC
D804	RB	2363217112	DIODE,RECT	1N5406	CTC
D804	RC	2363222012	DIODE,RECT	PG5406	PEC
D805		2363600195	DIODE,SWITCH	1N4148	
D806		2363600195	DIODE,SWITCH	1N4148	
D808		2363600195	DIODE,SWITCH	1N4148	
D809	RA	2363215495	DIODE,RECT	BYV26C	PHILIPS
D809	RB	2363221595	DIODE,RECT	ER106	PEC
D810	RA	2363215495	DIODE,RECT	BYV26C	PHILIPS
D810	RB	2363221595	DIODE,RECT	ER106	PEC
D811		2363600195	DIODE,SWITCH	1N4148	
D812	RA	2363214712	DIODE,RECT	30DF2	IR
D812	RB	2363212312	DIODE,RECT	FUF5402 3.0A 200V	FAGOR
D812	RC	2363220512	DIODE,RECT	UF5402GF2	PEC
D813		2363231612	DIODE,RECT	31DF2	IR(NI)
D814		2363214812	DIODE,RECT	31DF6	IR
D815		2363214812	DIODE,RECT	31DF6	IR
D818		2363600195	DIODE,SWITCH	1N4148	
D819		2363600195	DIODE,SWITCH	1N4148	
D821		2363600195	DIODE,SWITCH	1N4148	
F801		2213125207	FUSE	LITTEL 21502.5 2.5A 250V SB	
F801M		2407200791	HOLDER,FUSE	FC-05C	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
IC101		2365414700	IC,DIGITAL	LSC506423P	MOTOROLA
IC102	RA	2365411100	IC,DIGITAL	AT24C08	ATMEL
IC102	RB	2365411200	IC,DIGITAL	MP24LC08B	MICROCHIP
IC102	RC	2365411600	IC,DIGITAL	M24C08-BN6	SGS
IC301		2365316900	IC,LINEAR	TDA4866	PHILIPS
IC401		2365319600	IC,LINEAR	TDA4858	PHILIPS
IC501	RA	2365311000	IC,LINEAR	KA358	SAMSUNG
IC501	RB	2365310810	IC,LINEAR	LM358N	SGS
IC501	RC	2365305100	IC,LINEAR	LM358N	NATIONAL
IC801		2365311500	IC,LINEAR	KA3842B	SAMSUNG
IC802	RA	2365313800	IC,LINEAR	KA7805	SAMSUNG
IC802	RB	2365313810	IC,LINEAR	MC7805B	MOTOROLA
J149		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
LD801		2363703600	LED	LTL-30EDJ	LITEON
L401		2371130900	COIL,CHOKE	JD156G 3.5UH 9.5T REF	
L402		2371131500	COIL,CHOKE	JD156H 9mH/2UEW0.2□ 440.5T	
L404		2385503900	COIL,H LNR	JD177Y 7.5uH(OA) 19.5T	
L405		2371132500	COIL,CHOKE	JD177Y 0.45*34.5T 50uH	
L406		2371154900	COIL,CHOKE	JD176 2MH 150T(REF)	
L407		2371154800	COIL,CHOKE	JD176 145UH 43.5T	
L410		2379101595	FERRITE CORE	3.5X4.5X0.8	
L412		2379102000	FERRITE CORE	TR-11.8X7.3X15(J70) MAGNET	
L415		2379101495	FERRITE CORE	3.5X9X0.8	
L416		2379101595	FERRITE CORE	3.5X4.5X0.8	
L417		2379101595	FERRITE CORE	3.5X4.5X0.8	
L502		2379101595	FERRITE CORE	3.5X4.5X0.8	
L503		2379101595	FERRITE CORE	3.5X4.5X0.8	
L504		2379101600	FERRITE CORE	0.6□X2.5T 680 OHM MIN	
L801		2371110400	COIL,CHOKE	HUA HJC- B	
L802		2371110400	COIL,CHOKE	HUA HJC- B	
L804		2379101495	FERRITE CORE	3.5X9X0.8	
L805		2379101495	FERRITE CORE	3.5X9X0.8	
L806		2379101495	FERRITE CORE	3.5X9X0.8	
L807		2379101495	FERRITE CORE	3.5X9X0.8	
L808		2379101495	FERRITE CORE	3.5X9X0.8	
L809		2379101495	FERRITE CORE	3.5X9X0.8	
L810		2379101495	FERRITE CORE	3.5X9X0.8	
L814		2379101595	FERRITE CORE	3.5X4.5X0.8	
M101		2427412481	WIRE HARNESS	2520S08/8P B-IN 1061#24 300L	
M102		2427412480	WIRE HARNESS	2.0*10P/B-10P 1061#26 300L	
M404		2427309011	LUG W/WIRE	1007#22 800L	
M405		2427303002	LUG W/WIRE	64/0.12 W 4.3□T 100L	
M801		2427300008	LUG W/WIRE	UL1015 #18 GRN/YEL 110L	
M802		2427303003	LUG W/WIRE	120C/0.12 W 4.3□RING 100L	
PR801	RA	2229201901	THERMISTOR,PTH	PCB9R0MS	UPPERMOST
PR801	RB	2229201801	THERMISTOR,PTH	DGC2R9R0Q27A	WELSIN
P401		2404305003	CONNECTOR	2-6PIN-1610 4PIN	
P501		2404338001	CONNECTOR	LEOCO 2521 2PIN P=2.5	
P801		2404305001	CONNECTOR	2-6PIN-1610 2PIN	
Q101	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q101	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q310	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q310	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q403	RA	2361301291	XISTOR,NPN R	2SC2120(Y)	TOSHIBA
Q403	RB	2361315391	XISTOR,NPN R	2SC2001(L)	NEC
Q404	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q404	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q405	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q405	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q406		2361303291	XISTOR,NPN R	2SC2655(Y)	TOSHIBA
Q407		2361315700	XISTOR,NPN R	BU2520DF	PHILIPS
Q408	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q408	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q410		2361604600	FET,N-CH	FS10KM-5	MITSUBISI

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q411	RA	2361601800	FET,N-CH	IRF630	SAMSUNG
Q411	RB	2361604900	FET,N-CH	BUK455-200A	PHILIPS
Q412	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q412	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q413	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q413	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q414		2361111391	XISTOR,PNP R	2SA1376A(L)	NEC
Q415	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q415	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q416	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q416	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q417	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q417	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q418	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q418	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q419	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q419	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q420	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q420	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q421	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q421	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q422	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q422	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q423	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q423	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q426	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q426	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q427		2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q428		2361210191	XISTOR,PNP A	2SB647A-C	HITACHI
Q429	RA	2361316300	XISTOR,NPN R	2SC5248E	ROHM
Q429	RB	2361411600	XISTOR,NPN A	2SD1264A-P	PANASONI
Q430	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q430	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q431		2361603891	FET,N-CH	VN2222LL	MOTOROLA
Q501		2361401991	XISTOR,NPN A	2SD667(C)	HITACHI
Q502		2361210191	XISTOR,PNP A	2SB647A-C	HITACHI
Q701		2361305500	XISTOR,NPN R	2SC2688L	NEC
Q702	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q702	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q801		2366200591	SCR	MCR100-6	MOTOROLA
Q802	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q802	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q803	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q803	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q804	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q804	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q805	RA	2361605000	FET,N-CH	2SK2645-01M	FUJI
Q805	RB	2361601200	FET,N-CH	2SK1507	FUJITSU
Q805	RC	2361604500	FET,N-CH	FS10KM-12	MITSUBIS
Q806	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q806	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q807	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q807	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	SAMSUNG
Q808		2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q809	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q809	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
Q810		2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q811	RA	2361301291	XISTOR,NPN R	2SC2120(Y)	TOSHIBA
Q811	RB	2361315391	XISTOR,NPN R	2SC2001(L)	NEC
Q838	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q838	RB	2361313691	XISTOR,NPN R	KSC945C-G	SAMSUNG
RL401	RA	2413101600	RELAY,DC	JS1F-12V	NAIS
RL401	RB	2413102300	RELAY,DC	SRUDH-SS-112D1 DEG	
RL401	RC	2413102400	RELAY,DC	PUDH-SH-112D GOOD SKY	

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
RL801	RA	2413102200	RELAY,DC	AC240V/DC12V 5A OMI-SS-212DM	
RL801	RB	2413101400	RELAY,DC	AC240V/DC12V 5A OMI-SS-212L	
R101		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R102		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R103		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R104		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R105		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R113		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R114		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R115		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R116		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R121		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R122		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R123		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R124		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R125		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R126		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R128		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R129		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R130		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R135		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R136		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R137		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R140		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R142		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R143		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R144		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R145		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R146		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R147		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R300		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R301		2239222025	RES,PRE 1/4 S	RN 1/4WS 22.00K	F
R302		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R303		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R304		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R305		2233439395	RES,CBN 1/4 S	RD 1/4WS 39.00K	J
R306		2233415495	RES,CBN 1/4 S	RD 1/4WS 150.00K	J
R307		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R308		2233443395	RES,CBN 1/4 S	RD 1/4WS 43.00K	J
R309		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R310		2233439395	RES,CBN 1/4 S	RD 1/4WS 39.00K	J
R311		2233436395	RES,CBN 1/4 S	RD 1/4WS 36.00K	J
R312		2233436395	RES,CBN 1/4 S	RD 1/4WS 36.00K	J
R313		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R314		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R315		2235524903	RES,MTL 2	RS 2W 2.40	J
R316		2235410995	RES,MTL 1	RS 1W 1.00	J
R317		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R318		2232636195	RES,CBN 1/2	RD 1/2W 360.00	J
R319		2239222015	RES,PRE 1/4 S	RN 1/4WS 2.20K	F
R320		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R321		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R322		2239220025	RES,PRE 1/4 S	RN 1/4WS 20.00K	F
R323		2233424295	RES,CBN 1/4 S	RD 1/4WS 2.40K	J
R325		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K	J
R329		2233439395	RES,CBN 1/4 S	RD 1/4WS 39.00K	J
R330		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R400		2233420395	RES,CBN 1/4 S	RD 1/4WS 20.00K	J
R401		2239218715	RES,PRE 1/4 S	RN 1/4WS 1.87K	F
R402		2239210015	RES,PRE 1/4 S	RN 1/4WS 1.00K	F
R403		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R404		2233416395	RES,CBN 1/4 S	RD 1/4WS 16.00K	J
R406		2233430295	RES,CBN 1/4 S	RD 1/4WS 3.00K	J
R407		2233427395	RES,CBN 1/4 S	RD 1/4WS 27.00K	J



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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R408		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R409		2233439295	RES,CBN 1/4 S	RD 1/4WS 3.90K	J
R410		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R411		2233433395	RES,CBN 1/4 S	RD 1/4WS 33.00K	J
R412		2233456495	RES,CBN 1/4 S	RD 1/4WS 560.00K	J
R413		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R414		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R415		2233415095	RES,CBN 1/4 S	RD 1/4WS 15.00	J
R416		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R417		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R418		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R419		2232620195	RES,CBN 1/2	RD 1/2W 200.00	J
R420		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R421		2235568903	RES,MTL 2	RS 2W 6.80	J
R422		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R423		2235427095	RES,MTL 1	RS 1W 27.00	J
R424		2235568803	RES,MTL 2	RS 2W 0.68	J
R426		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R428		2232647995	RES,CBN 1/2	RD 1/2W 4.70	J
R429		2232647495	RES,CBN 1/2	RD 1/2W 470.00K	J
R430		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R431		2235412195	RES,MTL 1	RS 1W 120.00	J
R432		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R434		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R435		2233422395	RES,CBN 1/4 S	RD 1/4WS 22.00K	J
R436		2232610295	RES,CBN 1/2	RD 1/2W 1.00K	J
R437		2233412195	RES,CBN 1/4 S	RD 1/4WS 120.00	J
R438		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R439		2235520303	RES,MTL 2	RS 2W 20.00K	J
R440		2235520303	RES,MTL 2	RS 2W 20.00K	J
R441		2232612195	RES,CBN 1/2	RD 1/2W 120.00	J
R442		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R443		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R444		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R446		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R447		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R448		2233424395	RES,CBN 1/4 S	RD 1/4WS 24.00K	J
R449		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R450		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R451		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R452		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R453		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R454		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R455		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R456		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R457		2232668195	RES,CBN 1/2	RD 1/2W 680.00	J
R458		2235412195	RES,MTL 1	RS 1W 120.00	J
R459		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R460		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R461		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R462		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R463		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R464		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R465		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R466		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R467		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R469		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R470		2232647995	RES,CBN 1/2	RD 1/2W 4.70	J
R471		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R472		2233422595	RES,CBN 1/4 S	RD 1/4WS 2.20M	J
R473		2233430295	RES,CBN 1/4 S	RD 1/4WS 3.00K	J
R474		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R475		2233424495	RES,CBN 1/4 S	RD 1/4WS 240.00K	J
R476		2233439295	RES,CBN 1/4 S	RD 1/4WS 3.90K	J



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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R478		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R479		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R480		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R481		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R482		2233439395	RES,CBN 1/4 S	RD 1/4WS 39.00K	J
R483		2239224915	RES,PRES 1/4 S	RN 1/4WS 2.49K	F
R484		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R485		2233427295	RES,CBN 1/4 S	RD 1/4WS 2.70K	J
R486		2239233205	RES,PRES 1/4 S	RN 1/4WS 332.00	F
R487		2233468195	RES,CBN 1/4 S	RD 1/4WS 680.00	J
R489		2235533303	RES,MTL 2	RS 2W 33.00K	J
R490		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R492		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R493		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R495		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R496		2233456395	RES,CBN 1/4 S	RD 1/4WS 56.00K	J
R497		2233482295	RES,CBN 1/4 S	RD 1/4WS 8.20K	J
R501		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R502		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R503		2233415395	RES,CBN 1/4 S	RD 1/4WS 15.00K	J
R504		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R505		2232668995	RES,CBN 1/2	RD 1/2W 6.80	J
R506		2233482295	RES,CBN 1/4 S	RD 1/4WS 8.20K	J
R579		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R582		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R584		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R585		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R590		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K	J
R591		2233418395	RES,CBN 1/4 S	RD 1/4WS 18.00K	J
R593		2232647095	RES,CBN 1/2	RD 1/2W 47.00	J
R596		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R597		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R598		2232622095	RES,CBN 1/2	RD 1/2W 22.00	J
R701		2233415495	RES,CBN 1/4 S	RD 1/4WS 150.00K	J
R702		2233420495	RES,CBN 1/4 S	RD 1/4WS 200.00K	J
R703		2233420395	RES,CBN 1/4 S	RD 1/4WS 20.00K	J
R704		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R705		2233462495	RES,CBN 1/4 S	RD 1/4WS 620.00K	J
R706		2233420395	RES,CBN 1/4 S	RD 1/4WS 20.00K	J
R707		2233424395	RES,CBN 1/4 S	RD 1/4WS 24.00K	J
R708		2233420195	RES,CBN 1/4 S	RD 1/4WS 200.00	J
R709		2233439295	RES,CBN 1/4 S	RD 1/4WS 3.90K	J
R710		2232622495	RES,CBN 1/2	RD 1/2W 220.00K	J
R712		2235556903	RES,MTL 2	RS 2W 5.60	J
R801		2235447495	RES,MTL 1	RS 1W 470.00K	J
R802	RA	2229201212	THERMISTOR,PTH	SCK-103 10+-20% 3A THINKING	
R802	RB	2229400612	THERMISTOR,NTC	NTC UPPERMOST N10SP010***-K2	
R803		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R804		2233420195	RES,CBN 1/4 S	RD 1/4WS 200.00	J
R805		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R806		2233433095	RES,CBN 1/4 S	RD 1/4WS 33.00	J
R807		2233422195	RES,CBN 1/4 S	RD 1/4WS 220.00	J
R808		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R809		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R810		2235439395	RES,MTL 1	RS 1W 39.00K	J
R811		2235439395	RES,MTL 1	RS 1W 39.00K	J
R812		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R813		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R814		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R815		2233433395	RES,CBN 1/4 S	RD 1/4WS 33.00K	J
R816		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R817		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R818		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R819		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J

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LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R820		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K J	
R822		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K J	
R823		2233418395	RES,CBN 1/4 S	RD 1/4WS 18.00K J	
R824		2233468495	RES,CBN 1/4 S	RD 1/4WS 680.00K J	
R825		2235433895	RES,MTL 1	RS 1W 0.33 J	
R826		2235447395	RES,MTL 1	RS 1W 47.00K J	
R827		2235522103	RES,MTL 2	RS 2W 220.00 J	
R829		2235533803	RES,MTL 2	RS 2W 0.33 J	
R830		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K J	
R831		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K J	
R832		2235422195	RES,MTL 1	RS 1W 220.00 J	
R833		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K J	
R834		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00 J	
R835		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K J	
R836		2232620195	RES,CBN 1/2	RD 1/2W 200.00 J	
R837		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K J	
R840		2233433495	RES,CBN 1/4 S	RD 1/4WS 330.00K J	
R841		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K J	
R842		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K J	
SK801		2407412100	SOCKET	POWER SOCKET SC-9R SUPERCON	
SW101		2403700800	SWITCH,PU-TC	SKHH43A520-SV	
SW801	RA	2403104100	SWITCH,PUSH	FORWARD SPPJ22NE01-SV 30V 0.2A	
SW801	RB	2403104200	SWITCH,PUSH	RONG FONG WPM-2PLM 30V 0.3A	
S401	RA	2406200500	SWITCH,LEVER	EVQ-ROB (PANASONIC)	
S401	RB	2406200700	SWITCH,LEVER	TLF1X3 HORNG CHIN	
TP401		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP402		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP403		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP801		2404200100	PIN PLUG	UZ-006P(1P-A)	
T401		2374204800	XFORMER,POWR	JD176 1.5MH/60UH 80T/16T REF	
T403	RA	2385206400	FBT	FTF39L2505AZ MATSUSHITA	
T403	RB	2385207100	FBT	DFBTEA681-157H SAMPO	
T404		2371154400	COIL,CHOKE	JD176 9MH-14MH 60T/60T REF	
T701		2374204900	XFORMER,POWR	JD176 1.5MH/0.5H 27T/48ST(REF	
T801	RA	2371155100	COIL,CHOKE	HF2835-163Y1R5-T01A TDK	
T801	RB	2371155200	COIL,CHOKE	SR28X28V 16 mH MIN MYLEE	
T801	RC	2371155300	COIL,CHOKE	FET28S-V21603-956130 HUA JUNG	
T803		2374206900	XFORMER,POWR	JD177P2 0.27X3X18T 270uH	
U001		2202109104	PC BOARD	JD177P2 MAIN 94V0 330*245 5.07	
VR403		2225120391	RES,SEMI FIX	0.1W B 20K N TAPPING(V)	
VR404		2225110491	RES,SEMI FIX	0.1W B 100K N TAPPING(V)	
VR801		2225110291	RES,SEMI FIX	0.1W B 1K N TAPPING(V)	
X101		2369102601	XTAL,OSC	4.0MHZ XTAL	
ZD401		2363506395	DIODE,ZENER	HZ15-2 14.5-15.1V 0.5W HITACHI	
ZD406		2363510895	DIODE,ZENER	HZ9C-1 8.9-9.3V 0.5W HITACHI	
ZD801		2363507195	DIODE,ZENER	HZ24-2 23.6-24.7V 0.5W HITACHI	
7M01		2097400301	EYELET	BSS3-1/2H T=0.25 SN 3□□	
7M02		2097400302	EYELET	BSS3-1/2H T=0.25 SN 3□□	

## OTHERS

L501	2385700100	COIL,ROTATION	0.2□ 300T DCR100OHM MAX	
L811	2385404600	COIL,ERASE	JD177 NORMAL 0.5□X80T 1183L	
P901	2420102700	CRT WIRE	JD177D 0.12/80C 820L	
V901	2211015100	CRT ASSY	M41AGE83X76C CPT	(MPR□ 0.27Y)
V901	2211015110	CRT ASSY	M41AGE83X76CR CPT	(MPR□ 0.27R)
P909	2427501074	I/O CABLE	D-15M/JWT*12(1046) V.S. PC99	
P999	2427114003	POWER CORD	3GX0.75MM 6A/250V 1.5M VDE	(EU Wall Type)
P998	2427125001	POWER CORD	H05VV-F 0.75/3C 2468 GRAY 1.5M	(PC Type)
P999	2427130001	POWER CORD	SVT 18/3C GRAY 1.5M	(USA Wall Type)
P999	2427130037	POWER CORD	SAA 3ASL/100 1.5M	(Australia Type)